

CABLE-TEC EXPO® 2017

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# THE NEXT BIG...

DEAL  
CONNECTION  
INNOVATION  
TECHNOLOGY  
LEADER  
NETWORK



DENVER, CO  
OCTOBER 17-20



ENTER TITLE OF WORKSHOP

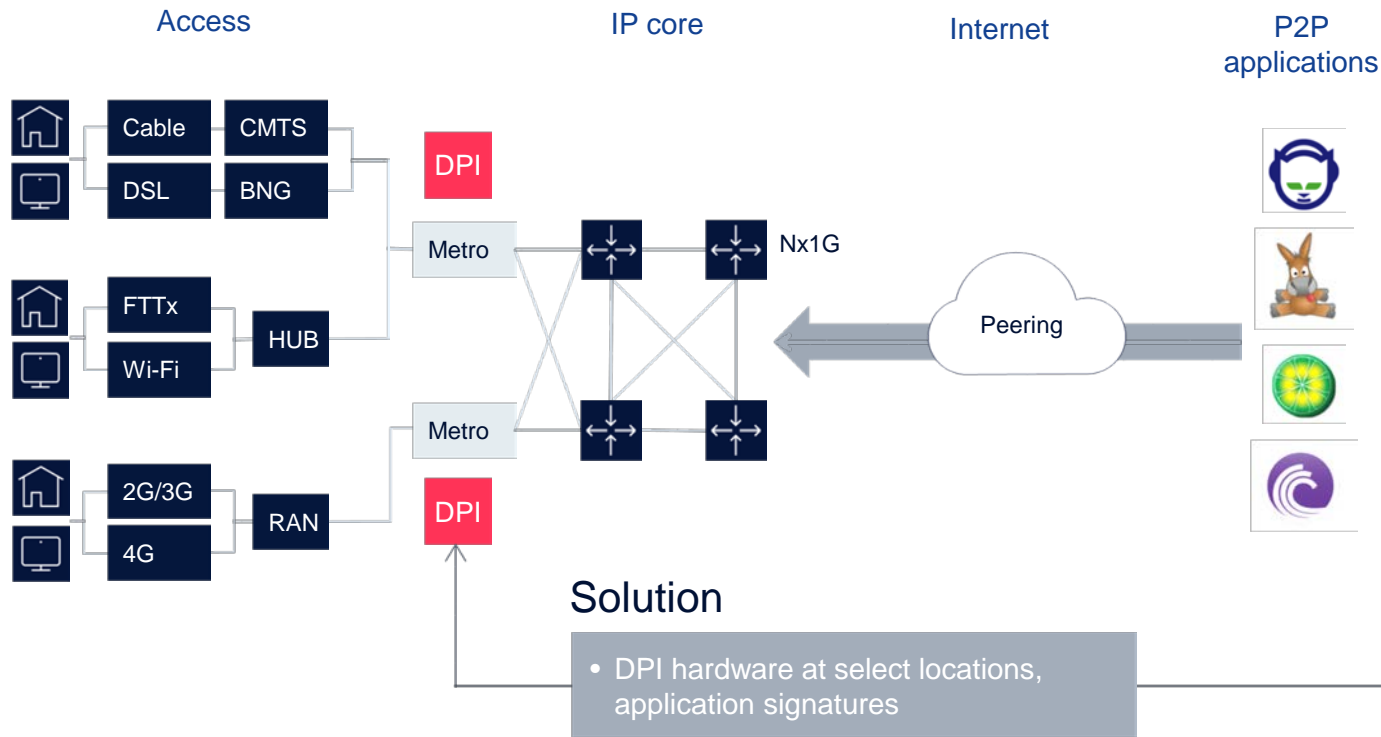
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# Insight Driven Network Automation

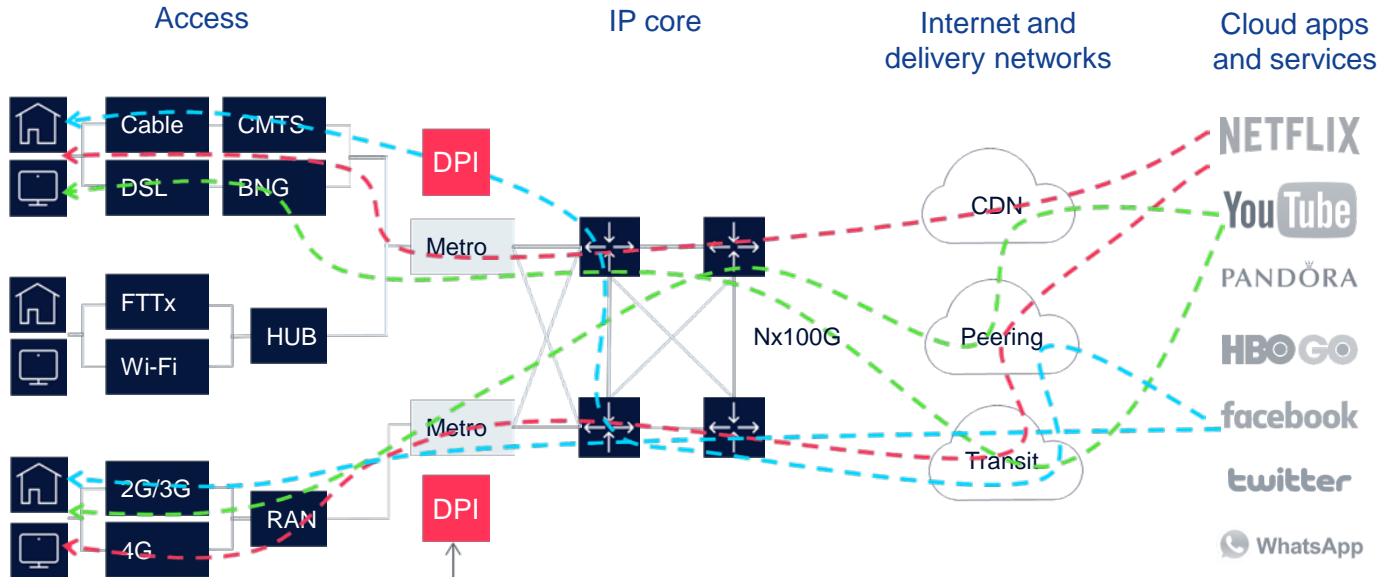
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Director, Product Marketing  
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# Today: Deliver QoE customers want, with economies SPs need



## New challenge

- Instantly identify cloud apps & services
- See how they flow through the internet
- See how they flow through my network

## Re-use?

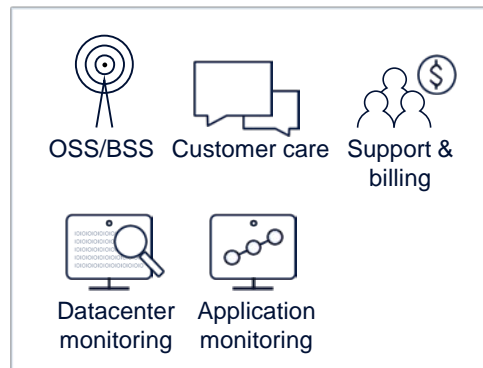
- DPI not designed for cloud/IoT scale, encrypted flows or multi-dimensional analytics

# The evolution of IP network analytics

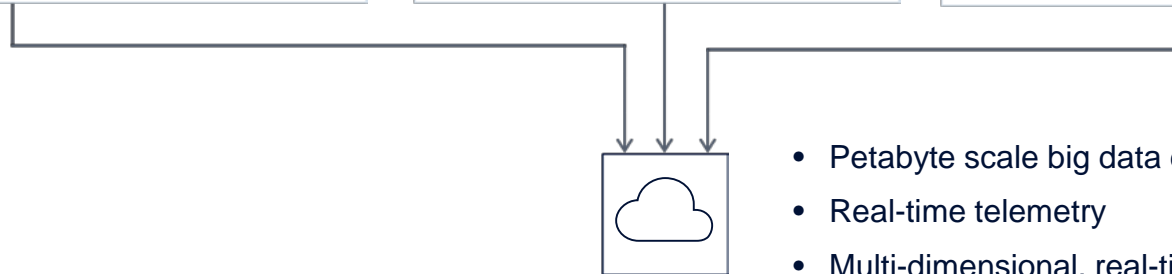
## Network telemetry



## Enterprise data

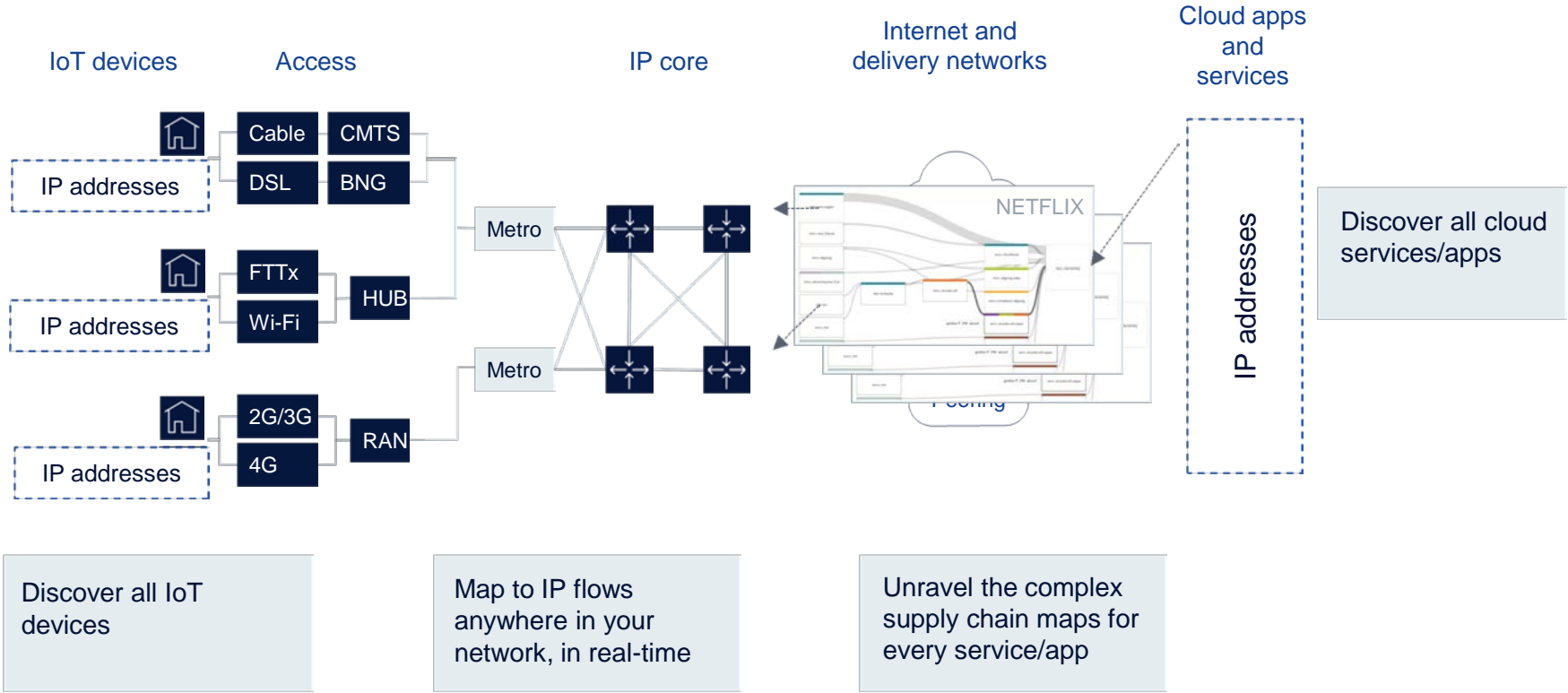


## Internet supply chain and "caller id" for cloud apps/services

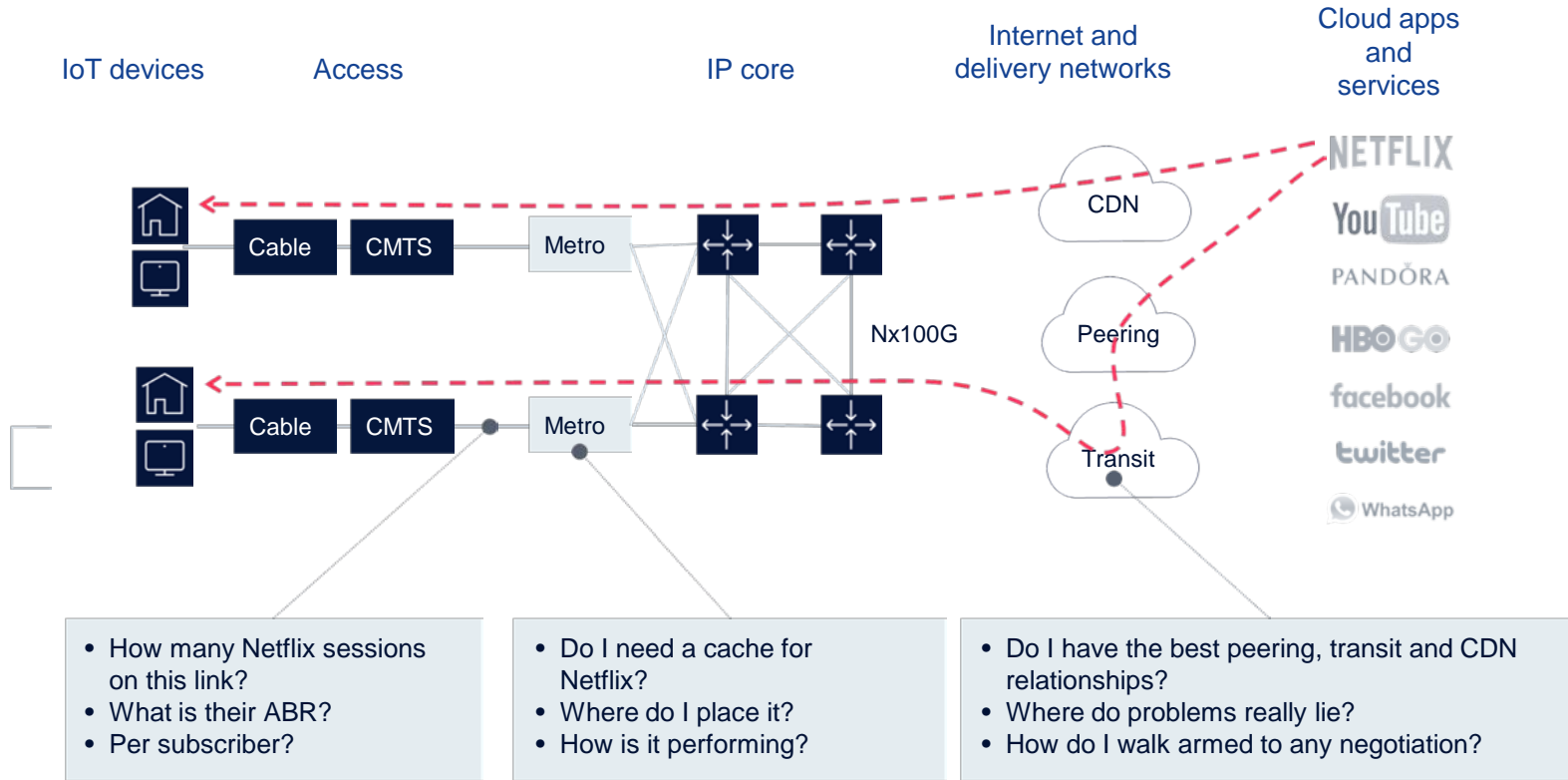


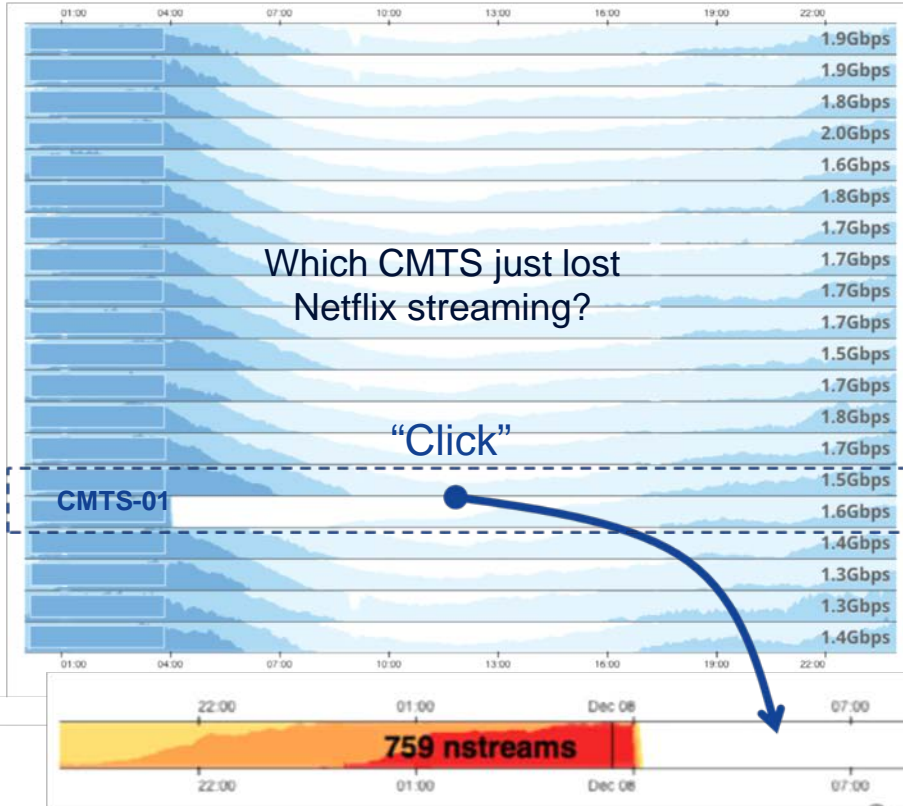
- Petabyte scale big data engine
- Real-time telemetry
- Multi-dimensional, real-time analytics

# Internet supply chain / “caller-id” for cloud services

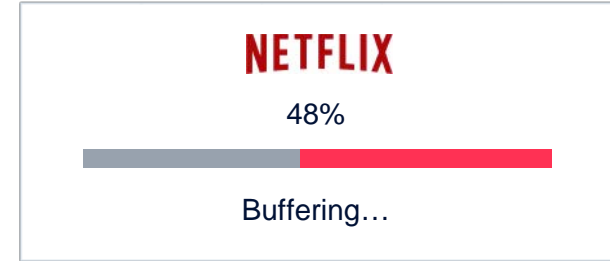


# Ensuring high QoE & optimal asset use for OTT traffic



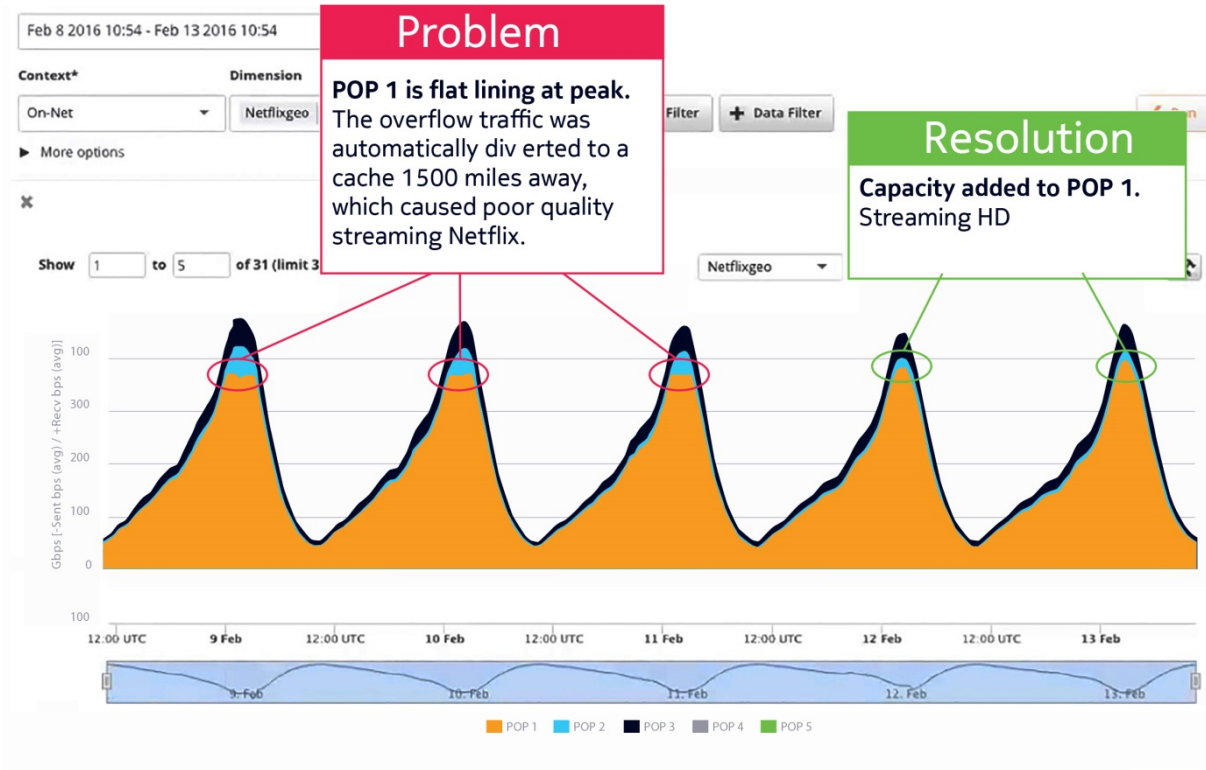


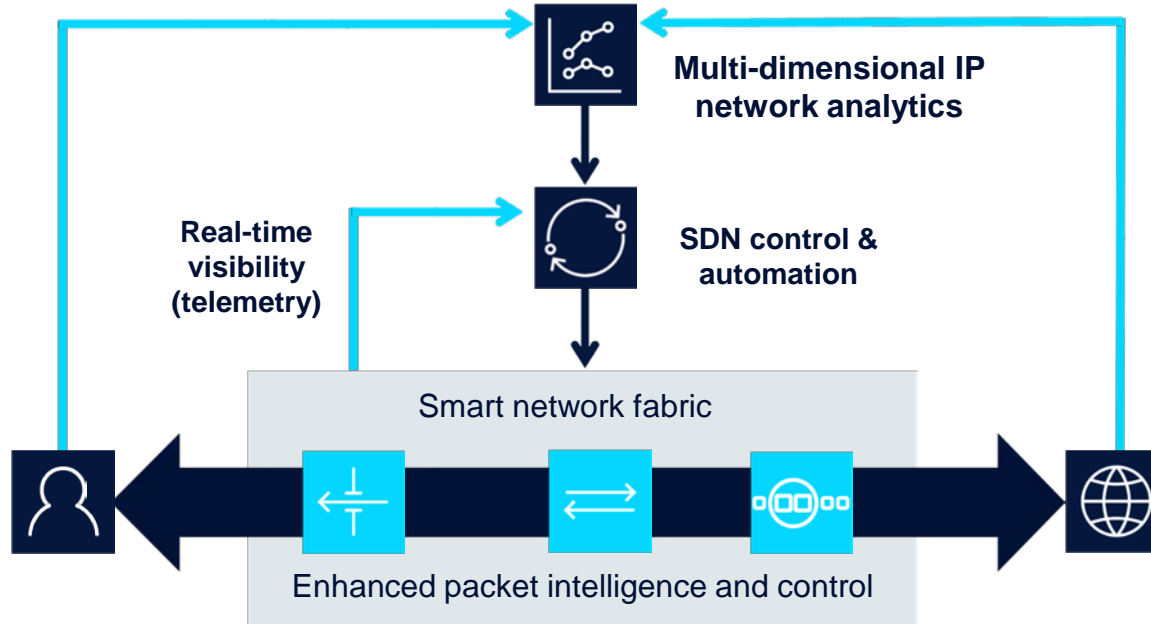
## The problem...



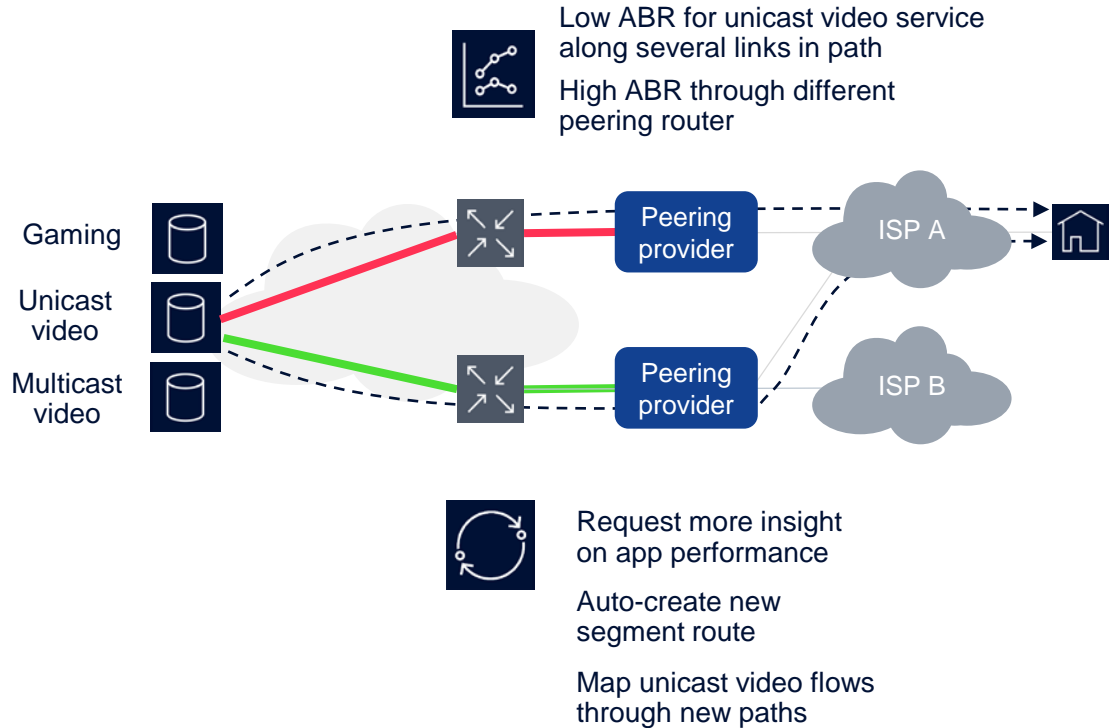
**The solution:** real-time insight into service quality and availability across the entire customer and network delivery path



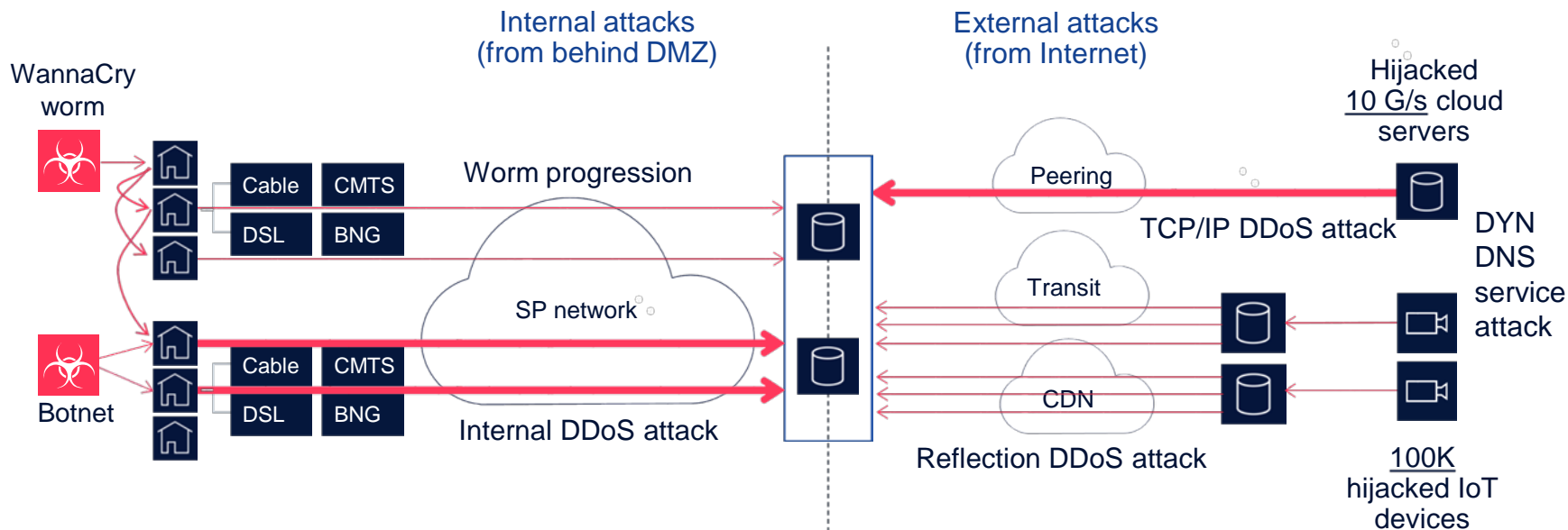




- **Problem:** how maintain high QoE for subscribers?
- Manual analysis/action too slow to be effective
- **Solution:** Identify app QoE issues & affected links
- Map flows to new segment routes and to partners with available bandwidth
- Policy-driven, automated process



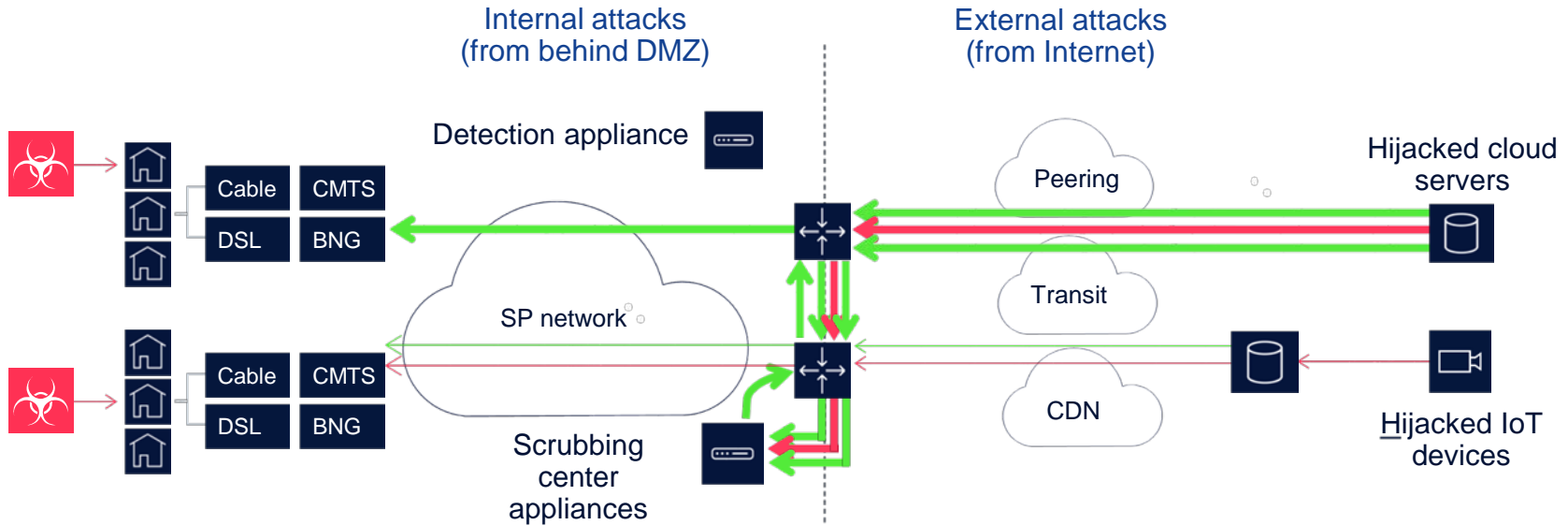
# The new face of DDoS and malware



- “Maginot line” defense philosophy
- Rapid proliferation of bots/malware
- Crippling of internal infrastructure

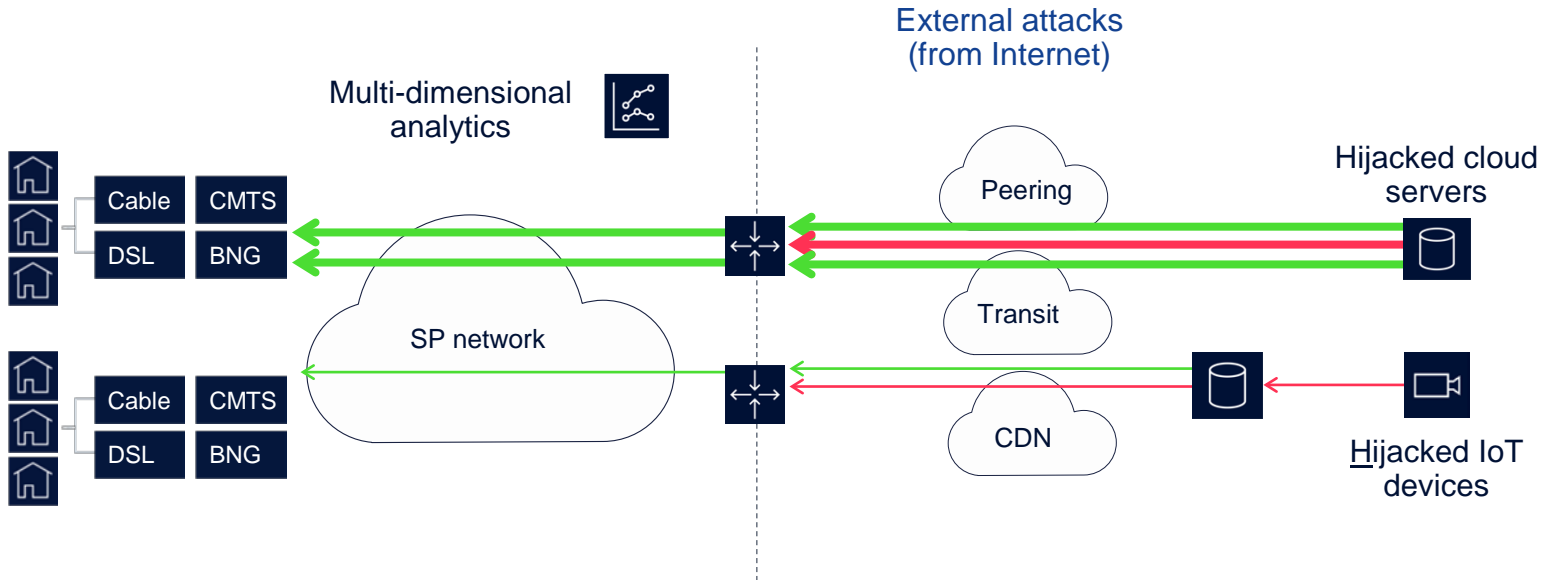
- Cloud based attack sources
- Multiple attack techniques
- Terabit scale, 99% of which is volumetric attacks

# Today's DPI/appliance defence not designed for cloud/IoT



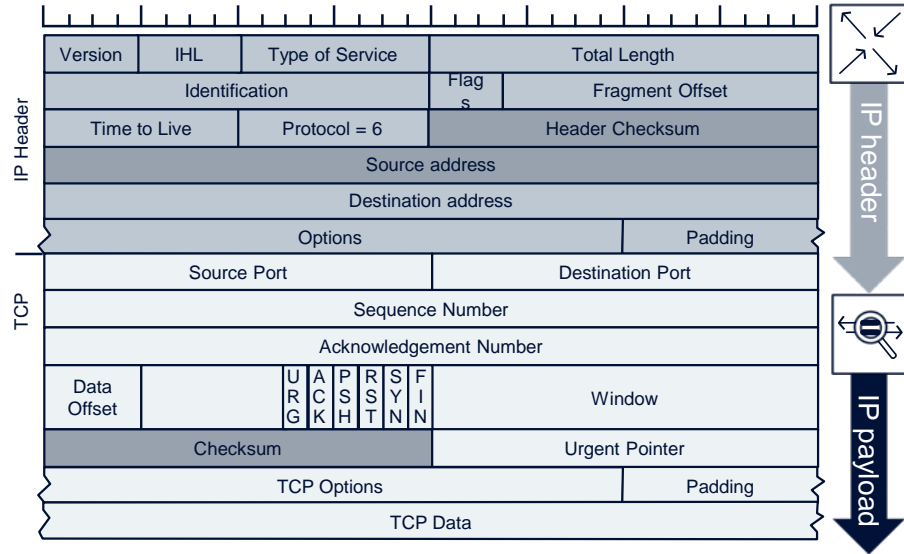
- **No internal defense** capability offered

- **Simplistic** – IP flow analysis from ~15 years ago  
- subject to false positives/negatives
- **Expensive** - accelerating capital costs
- **Slow** – manual mitigation in scrubbing centers



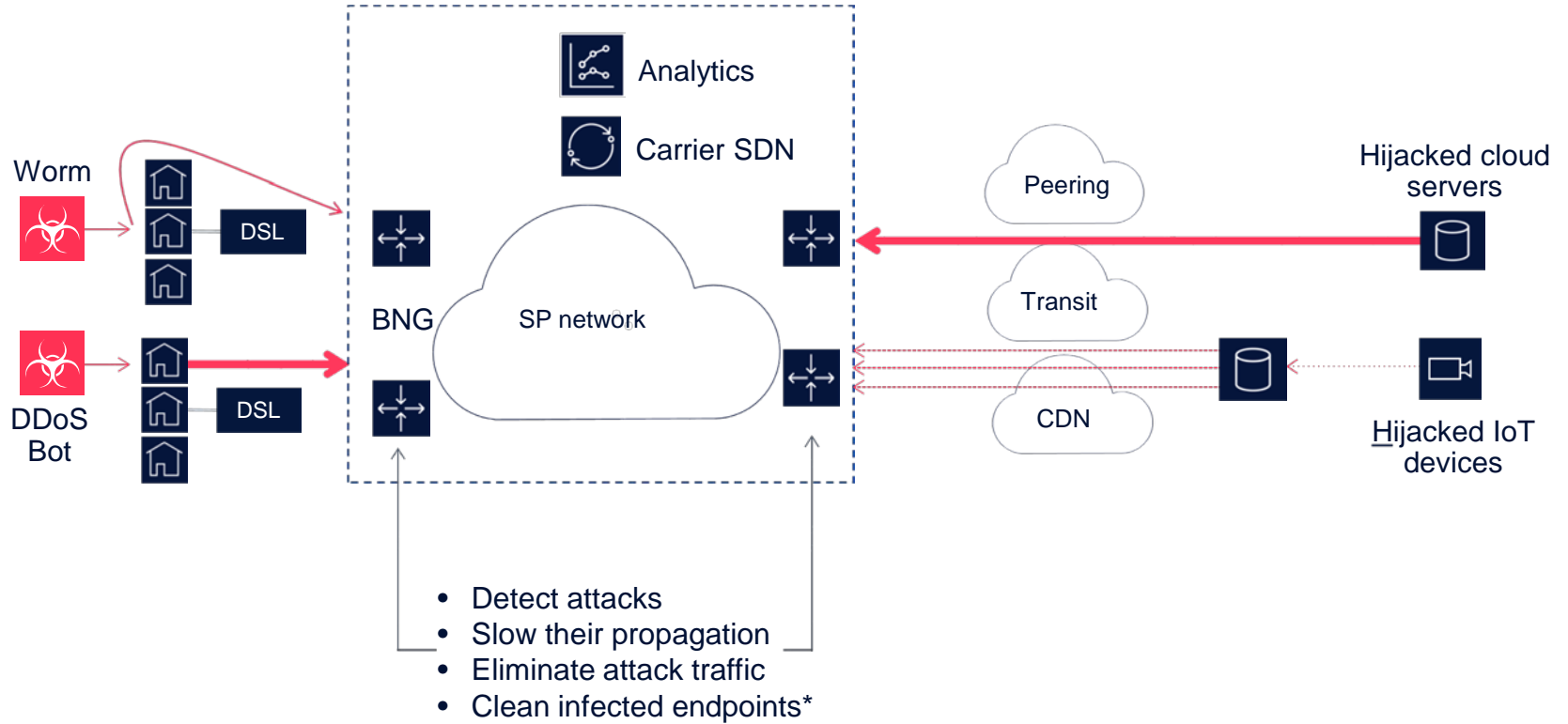
- **More precise:** multi-dimensional analytics, cloud genome, enhanced router filtering
- **Faster:** detection and mitigation all in-line
- **More cost effective:** cloud scale analytics, NPE scale filtering

## IPv4 packet structure



- Conventional IP routers have limited DDoS attack mitigation based on “5 tuple” IP header inspection
- Centralized appliances with stateful DPI can mitigate volumetric DDoS attacks but are costly/scale poorly
- Integrating network appliances in routers saves on backhaul cost but consumes valuable slot capacity
- Volumetric DDoS filtering based on router silicon reduces the need for network appliances, while maximizing router slot capacity for user traffic

# Multi-perimeter defence





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**THANK YOU!**

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