# Using Sources of Truth to Enrich and Understand Network Telemetry



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# Who am I?

**Current**
Senior Solutions Engineer - Kentik

**Past**
25 years in networking
Ran networks (including peering) before migrating
to the vendor side

**More details**
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# Network observability

The difference between more data and more answers

Traditional monitoring lets you see **what's** happening on your network.

Network observability helps you understand **why** it's happening and automate a response.

# Network observability

## What are the building blocks?

Ingest of a huge amount of data from many sources

Classify, cluster, group, scale, and normalize data

*(create structure among unstructured data)*

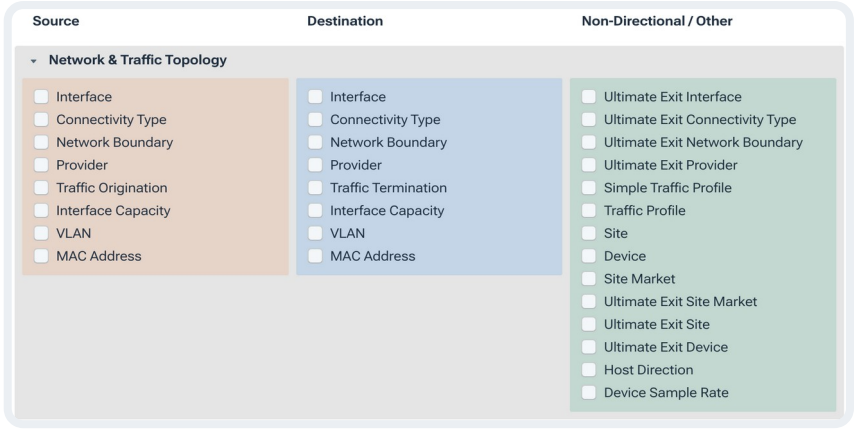
Recognize patterns in data

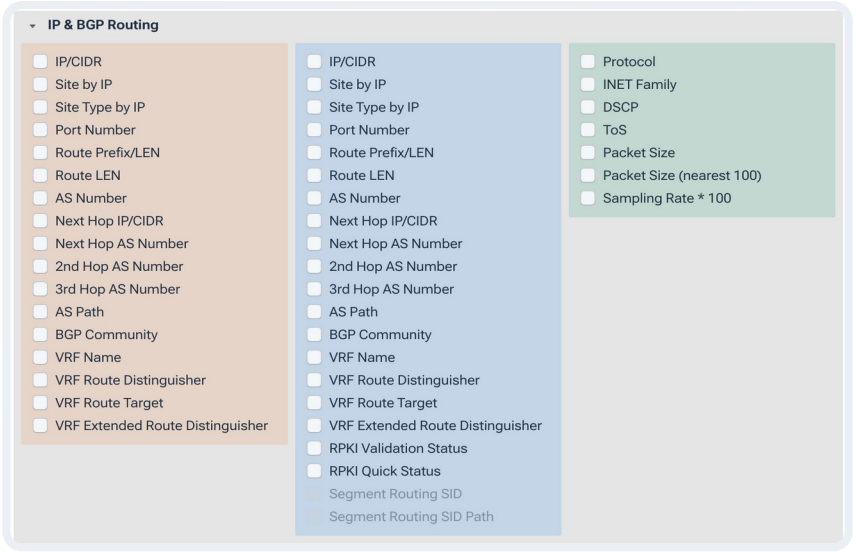
Automate baselining and perform anomaly detection

Correlate to learn how data points relate to each other

# Context is needed for network observability

# NetFlow is a good step

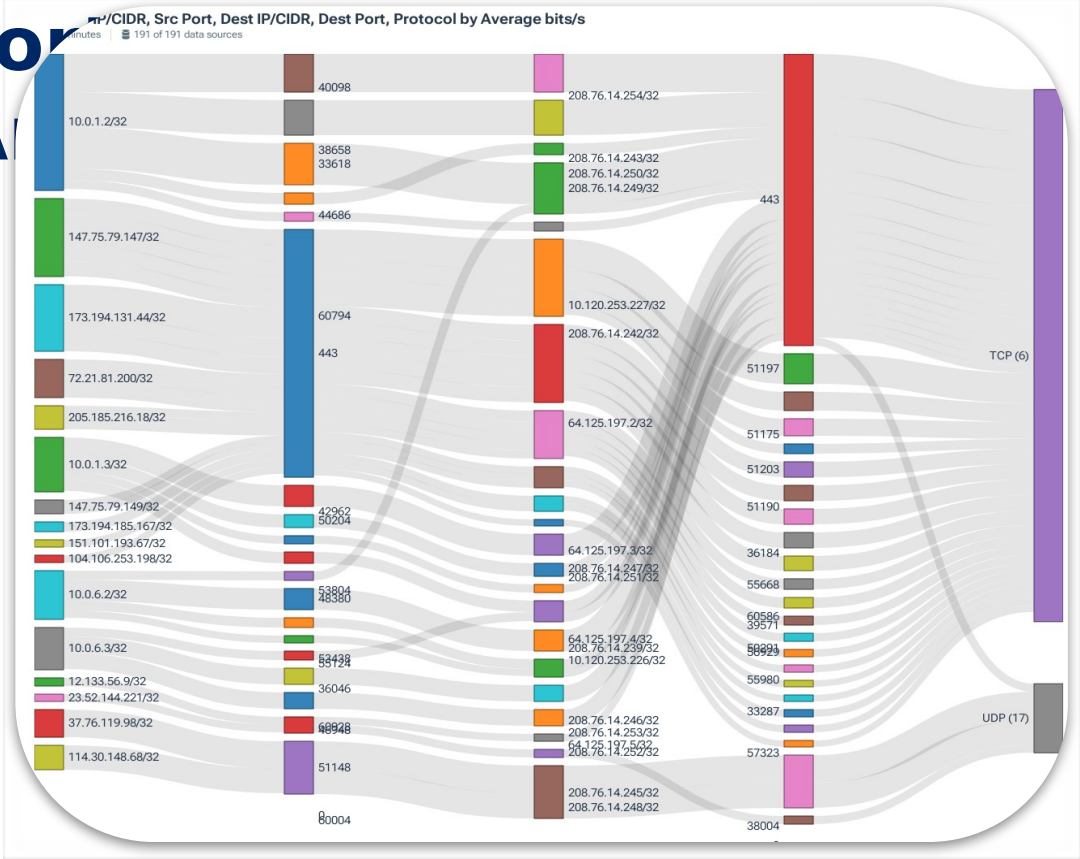


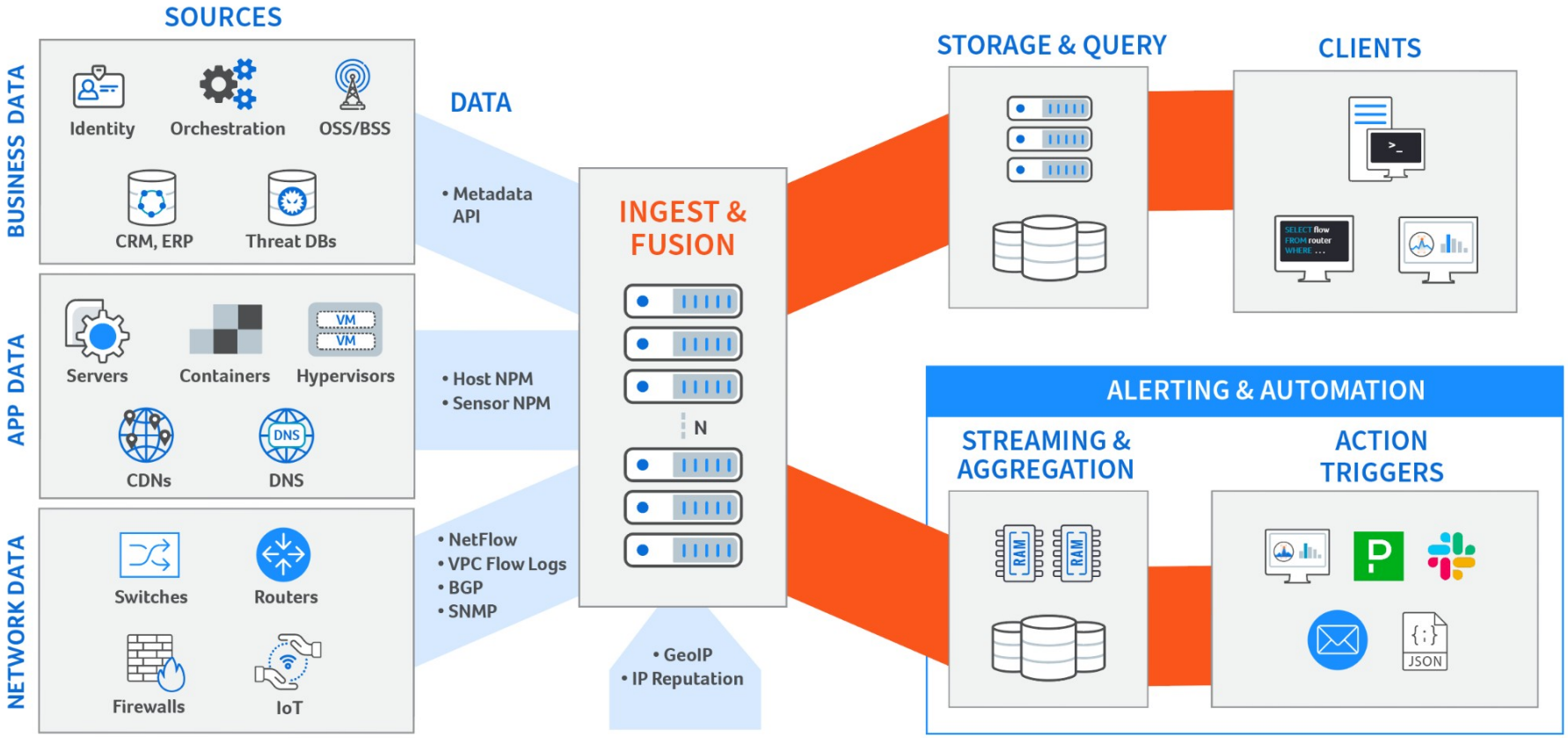
# IP Addresses, Por… And Protocols A… Not Enough

- It is awesome to see what traffic is flowing on the network.
- But what does any of this mean in terms or users, content, or network costs?



# Best Practices for Leveraging Contextual Data



# Telemetry Enrichment

## Enrichment with metadata provides context

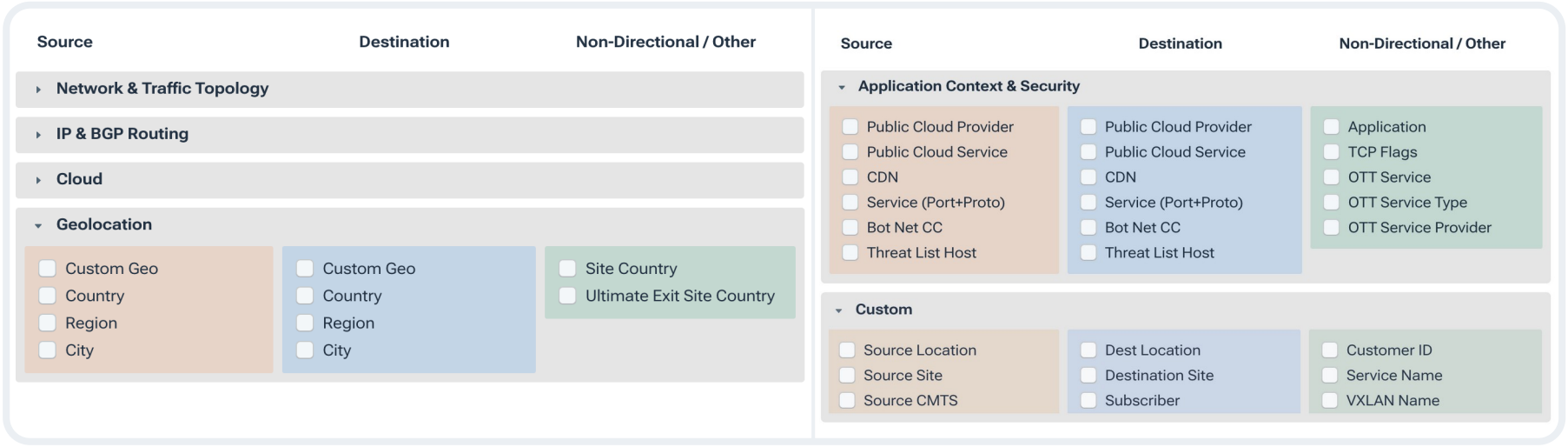
| | | |
|---|---|---|
| Geo-location | Threat feeds | Transit costs |
| BGP table information | Pod names | Public BGP data |
| PeeringDB information | IPAM | OTT service name |
| Application identifiers | Process IDs | CDN names |
| DNS information | Synthetic test results | Customer names |

# But how?

- Controversial opinion → there is no single source of truth
- The data exists but is spread across numerous sources
- Automation can pull this data together
- Using APIs, push it into a network observability platform that can enrich the network traffic

# Context for the win!



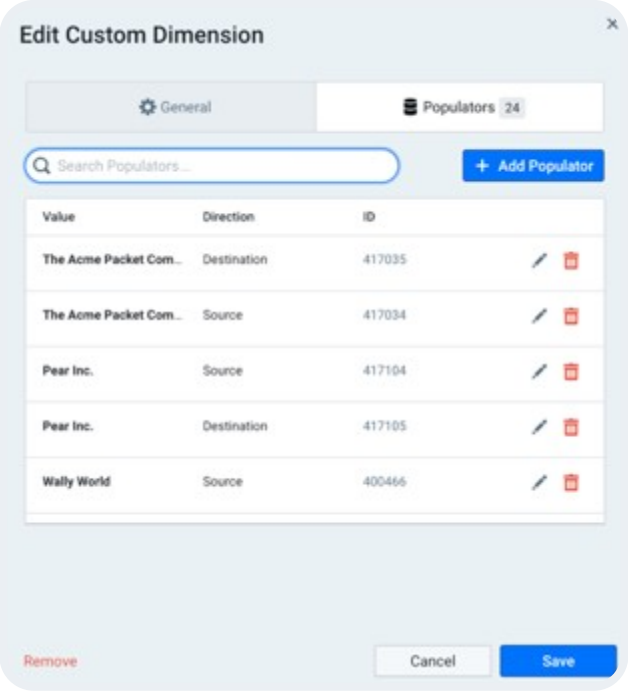

 

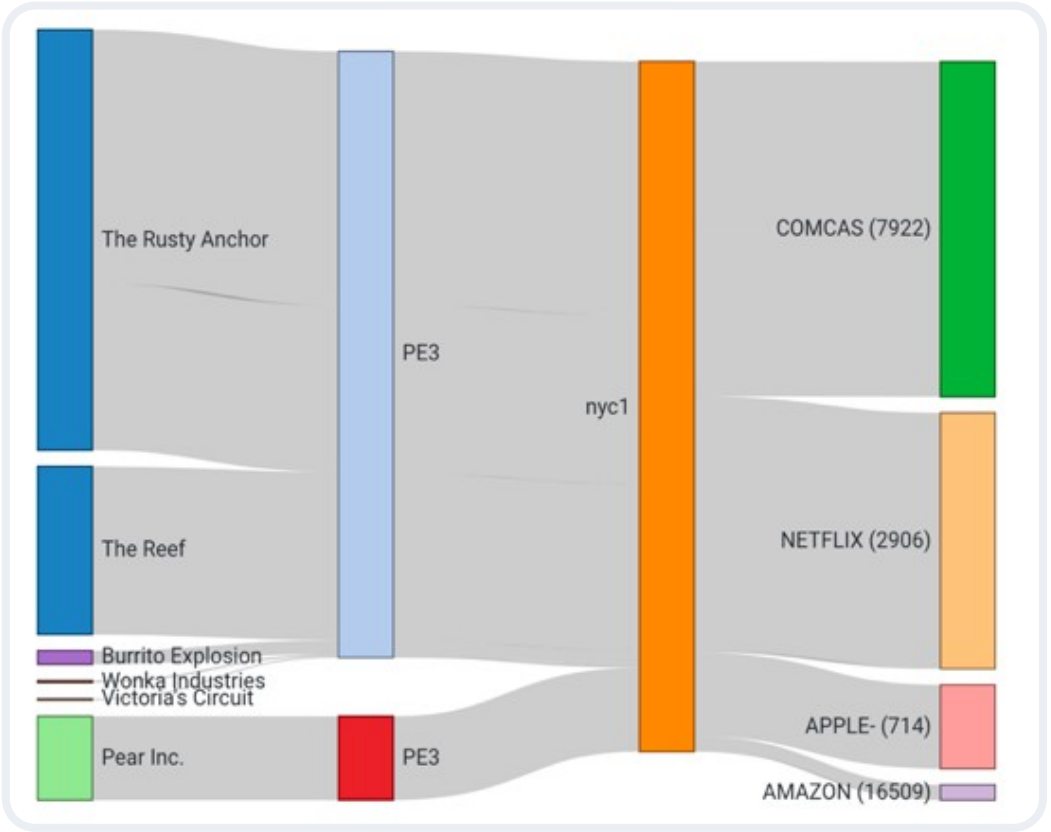
# There’s no Right Answer

- Many tools can be used for flow collection and enrichment
- Make sure you do the enrichment at data ingest time or you lose the context and query performance (useability) will suffer
- Like anything Open Source, each organization has to weigh the resource commitment against the cost of commercial offerings
- **Call to Action:** In 2025, you cannot operate a large scale network without a network observability platform that can collect and enrich this data to help your teams make good decisions

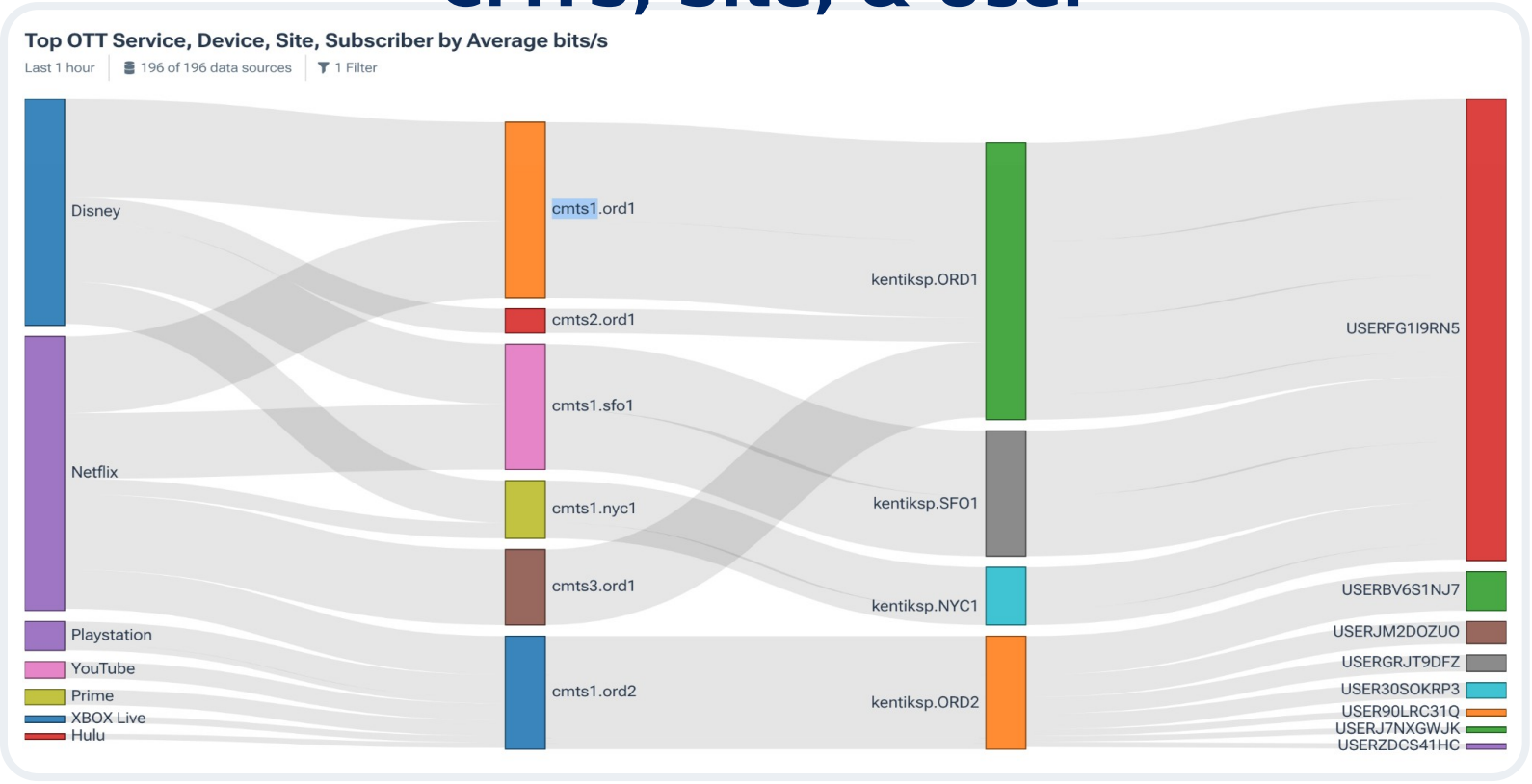
# Business Context: The Customer



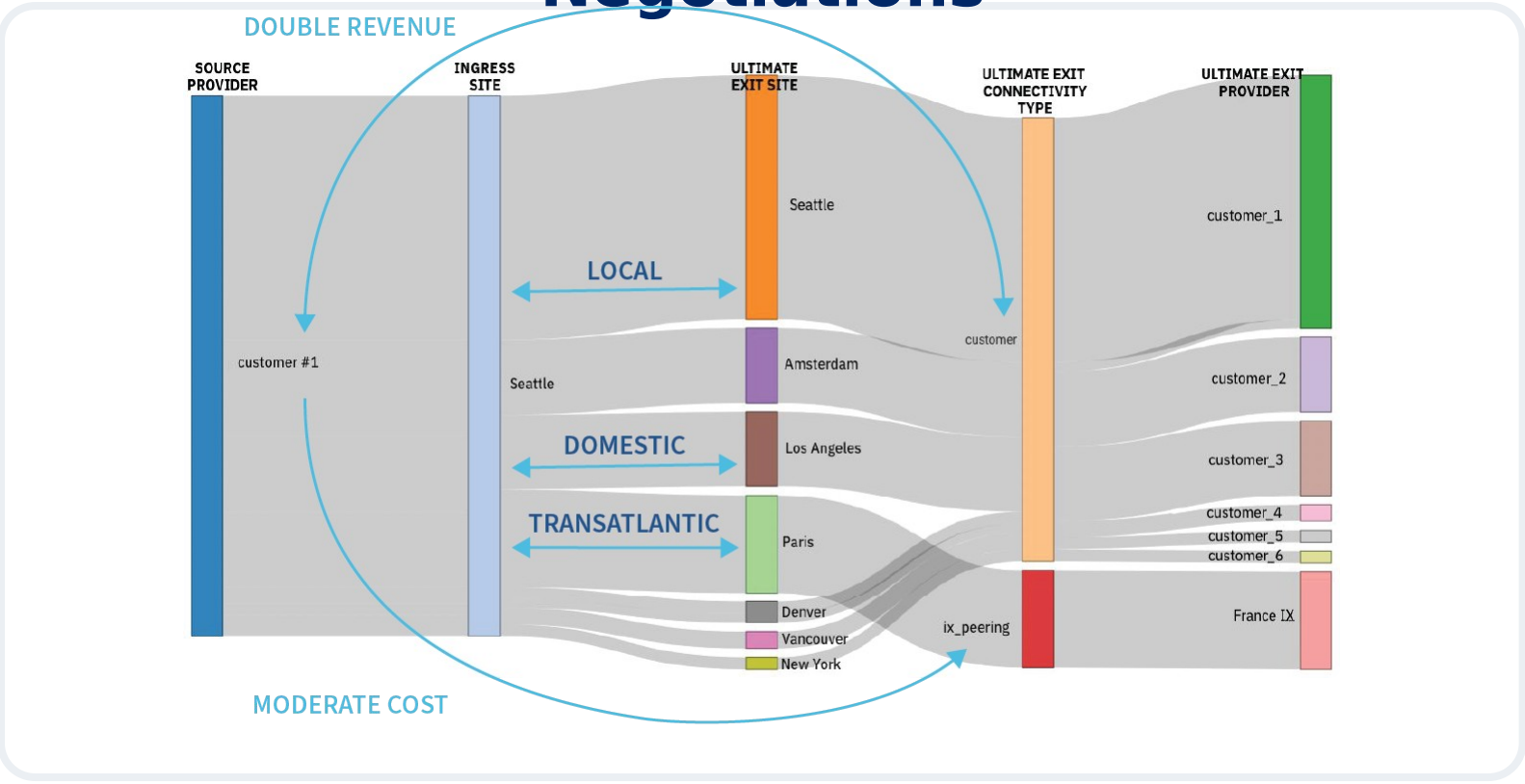

 

# Business Context: OTT Service Usage by CMTS, Site, & User



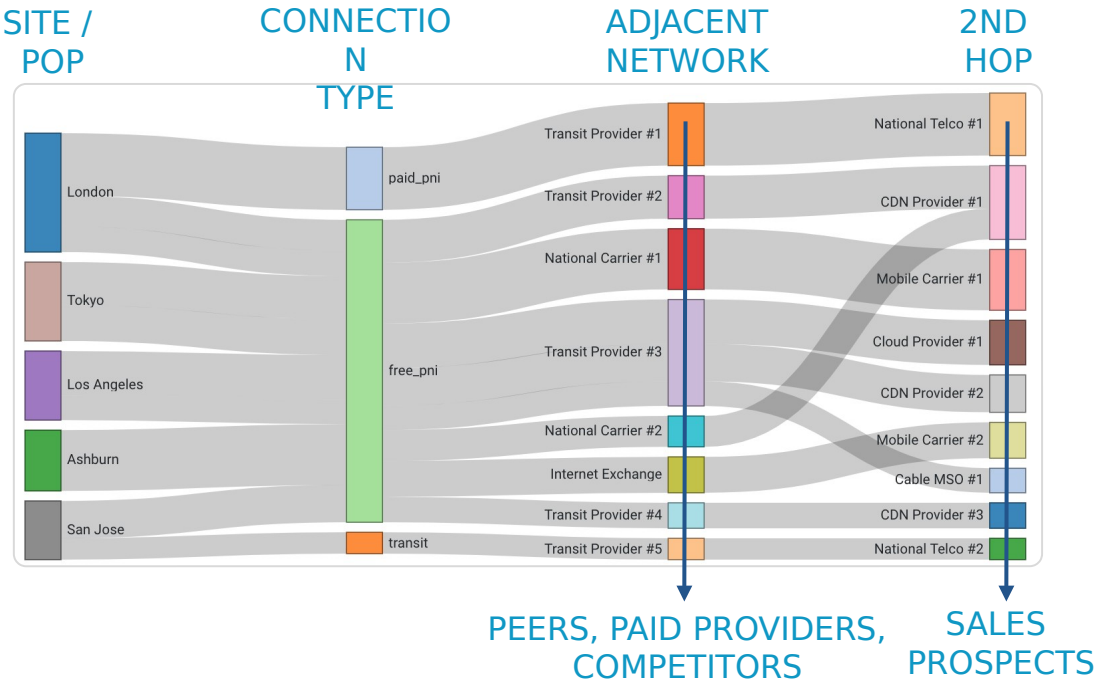

 

# Business Context: Customer Contract Negotiations



# Business Context: Discover Sales and Upsell Opportunities



# But now what?

- Alerting with context
- Outbound API webhooks can trigger network automation workflows
- Examples:
  - Customized DDoS mitigation
  - Updating ACLs or Firewalls based on dropped traffic
  - Changing routing policies due to congested ports

# Summary

Modern networks are both critical and complex

Network observability is no longer a nice to have

Organizing data by network layer constructs limits the usefulness

Contextual data is needed to fully utilize the power of network data

Network automation can tie the sources of truth into the observability systems to provide this context

Better action can be taken by automation platforms with contextualized observability

# Questions?

# Thank you!

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