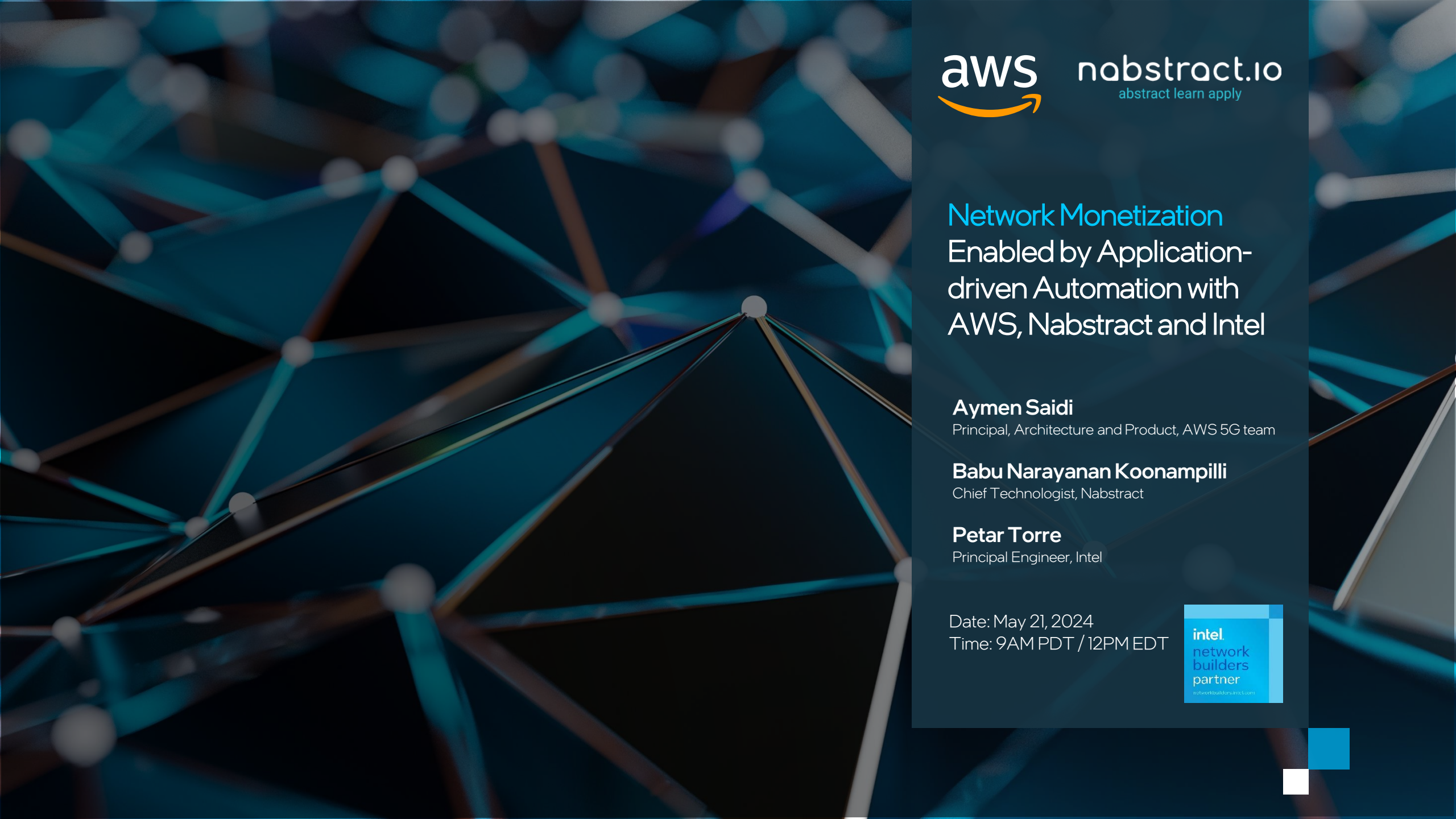

Network Monetization Enabled by Application-driven Automation with AWS, Nabstract and Intel

Aymen Saidi
Principal, Architecture and Product, AWS 5G team

Babu Narayanan Koonampilli
Chief Technologist, Nabstract

Petar Torre
Principal Engineer, Intel

Date: May 21, 2024
Time: 9AM PDT / 12PM EDT

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Network Monetization Enabled by Application-Driven Automation

May 21, 9 a.m. PDT–12 p.m. EDT

Aymen Saidi
Principal, Architecture and Product, AWS

aws

Babu Narayanan Koonampilli
Chief Technologist, Nabstract

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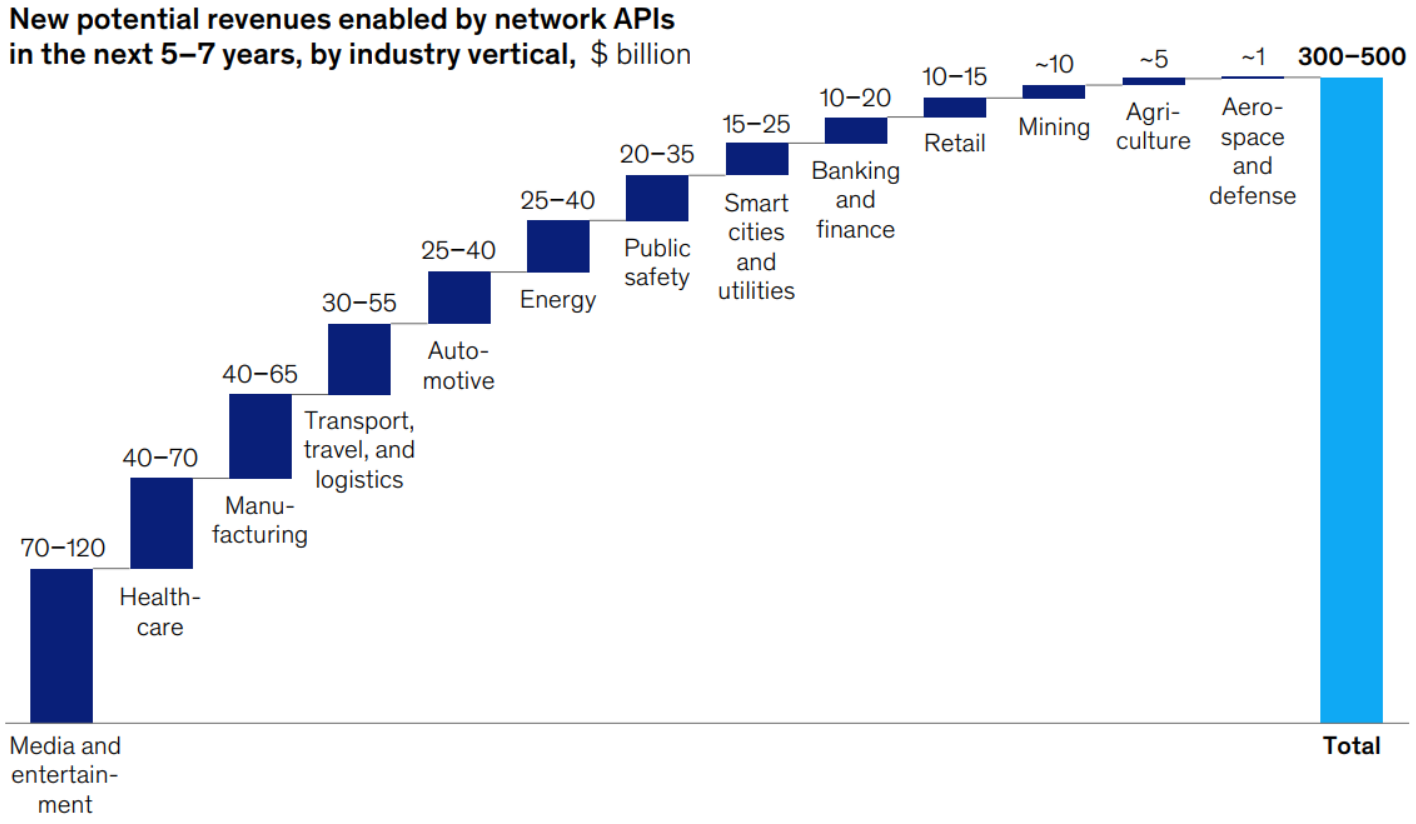
Petar Torre
Principal Engineer, Intel

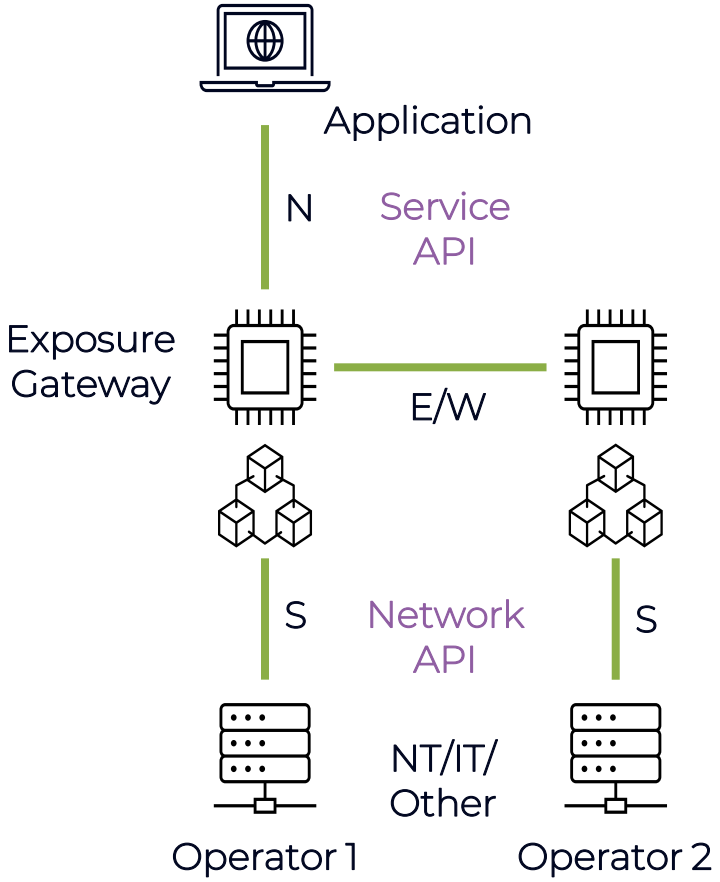
intel

Why now

Network APIs offer telcos a route to a multi-billion dollar market for connectivity and EDGE-related services in the coming five to seven years.



Source: McKinsey analysis
https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/what-it-will-take-for-telcos-to-unlock-value-from-network-apis



Source: CAMARA Presentation

CAMARA and GSMA Open Gateway

API Portfolio	Anti-Fraud	Mobile Connectivity / Value-Added Services		Fixed Connectivity	Cloud & Edge	Payments
API Product Family	Subscriber Identity	Location	Network Quality/ Optimisation	Network Quality/ Optimisation	MEC	Payments and Charging
CAMARA API	Device Status	Device Location Verification	Connectivity Insights	Home Devices QoD	Simple Edge Discovery	Carrier Billing
	IMEI Fraud	Geofencing	Mobile Quality on Demand		Traffic Influence	
	KYC Fill-in	Location Retrieval				
	KYC Match					
	Number Verification					
	SIM Swap					
	SIM Swap Subscription Notification					
	One Time Password SMS					

Source: https://www.gsma.com/solutions-and-impact/gsma-open-gateway/gsma-open-gateway-api-descriptions/

The challenge and solution

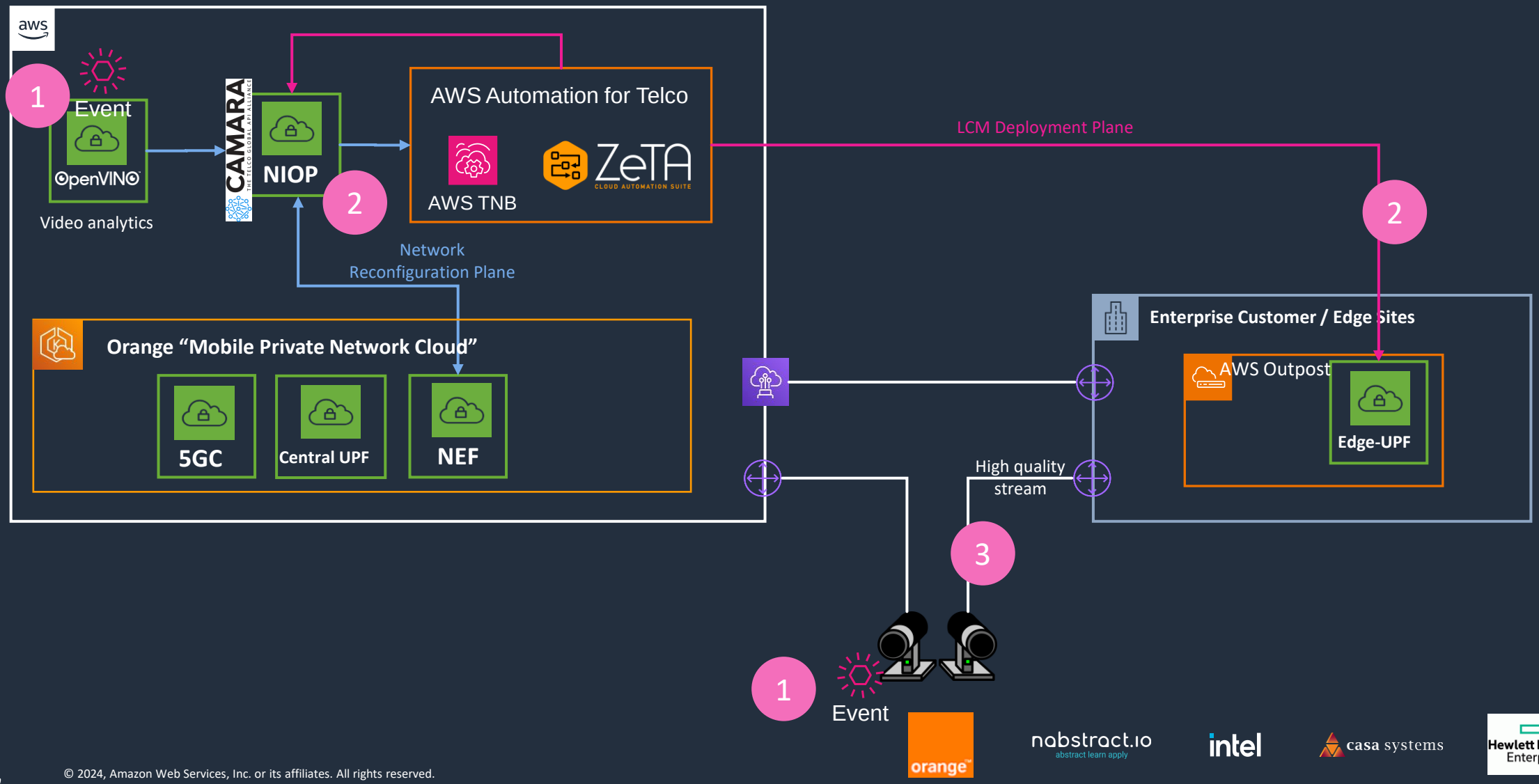
CSPs challenges

- Limited edge applications monetization for private and public use cases
- Complex operating models and lack of holistic automation
- Difficult marriage of network and applications orchestrations

Solution brief

- AWS enables self-programmable networks across the Cloud Continuum
- AWS Telco Network Builder to automate the deployment of telecom networks on AWS
- Orange “Mobile Private Network cloud” dynamically programmable networks
- Nabstract platform enabling self-driven edge applications and mobile network topology change via open API (CAMARA)

Self-driven programmable 5G networks



Networks, cloudified.

Ubiquitous Cloud Programming Model for 5G networks

	AWS Availability Zones	AWS Local Zones	AWS Outpost	AWS Wavelength	AWS EKS/ EKS-A
Overview	AWS Infrastructure in one or more discrete data centers in an AWS Region	AWS infrastructure and services **in large metro centers**	AWS infrastructure and services **on premises**	AWS infrastructure and services in CSP 5G networks	AWS container management services for Outposts & self-managed infrastructure
Use cases	Most general workload. Scalable, fault-tolerant, high-availability deployments for DR	Migration, low latency, local data processing	Migration, local critical apps, data residency	Ultra-low latency, local data processing	Consistent AWS management experience in brownfield deployments
Service model	Scalable capacity in AWS managed & operated facility	Scalable capacity in AWS managed & operated facility	Dedicated capacity in customer's DC, colo, on-prem location	Scalable capacity in CSP DC managed & supported by AWS	AWS supported software package

AWS Telco Network Builder Quadrant

Deployment stack

Life Cycle Operations of underlying infrastructure, container and network Functions. Complete visibility across the stack

Ubiquitous Model

Manages across all AWS deployment models (Regions, LZ, Outpost) and across all telco workloads (RAN, Core, IMS, Network and Enterprise applications) coming from multiple vendors

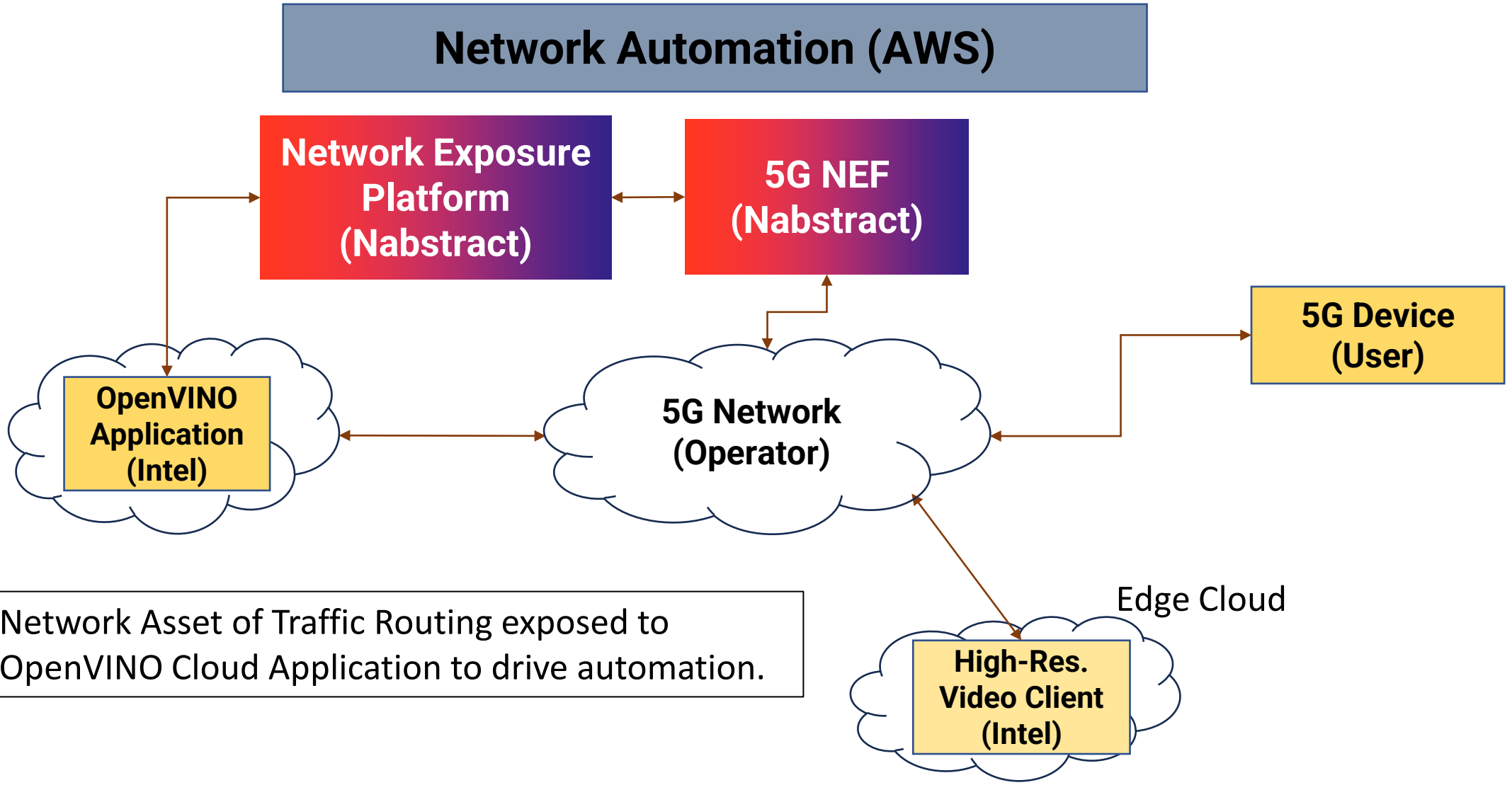
Programmability

Automation service available through AWS console, AWS CLI, SDKs, or REST APIs

Open Interfaces

Exposes industry standard ETSI interfaces to service orchestrator

Network monetization enabled by appln driven automation – A recap



Network Asset of Traffic Routing exposed to OpenVINO Cloud Application to drive automation.

Creating Network Assets that can be Monetized

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Assets to Monetize

- Network Data
- Device Info
- Connectivity Info
- Traffic Routing
- Device Status
- Device Location Info
- Quality of Service
- Subscriber Info

Creating Monetizable Services for Appln Users

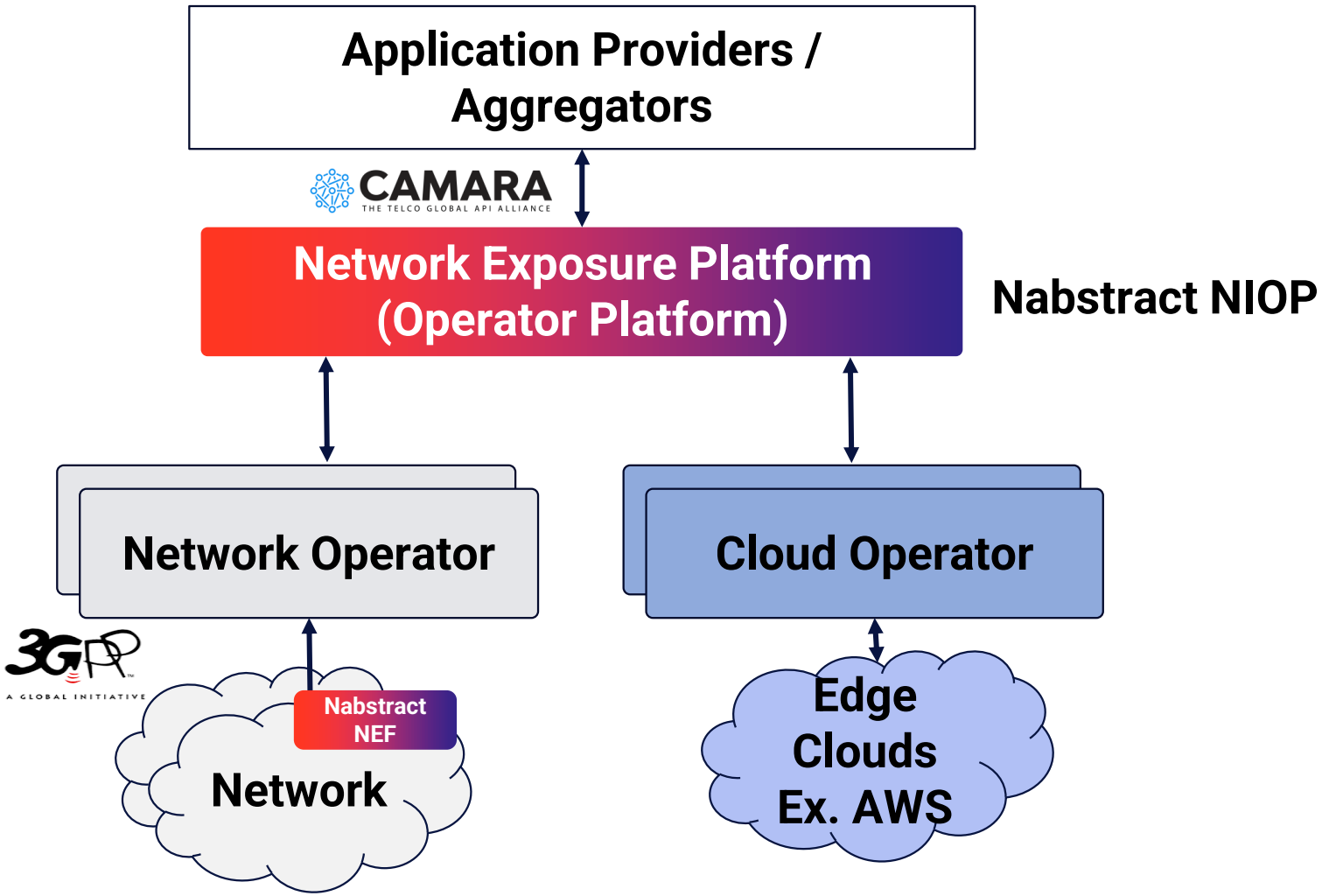
- Simple Standard exposure APIs
- QoE
- Intent based APIs
- Optimised connectivity
- Abstracted info
- Filtered data
- Jargon-free
- Analytics
- Future predictions

Many service variations as market opens up and innovation continues

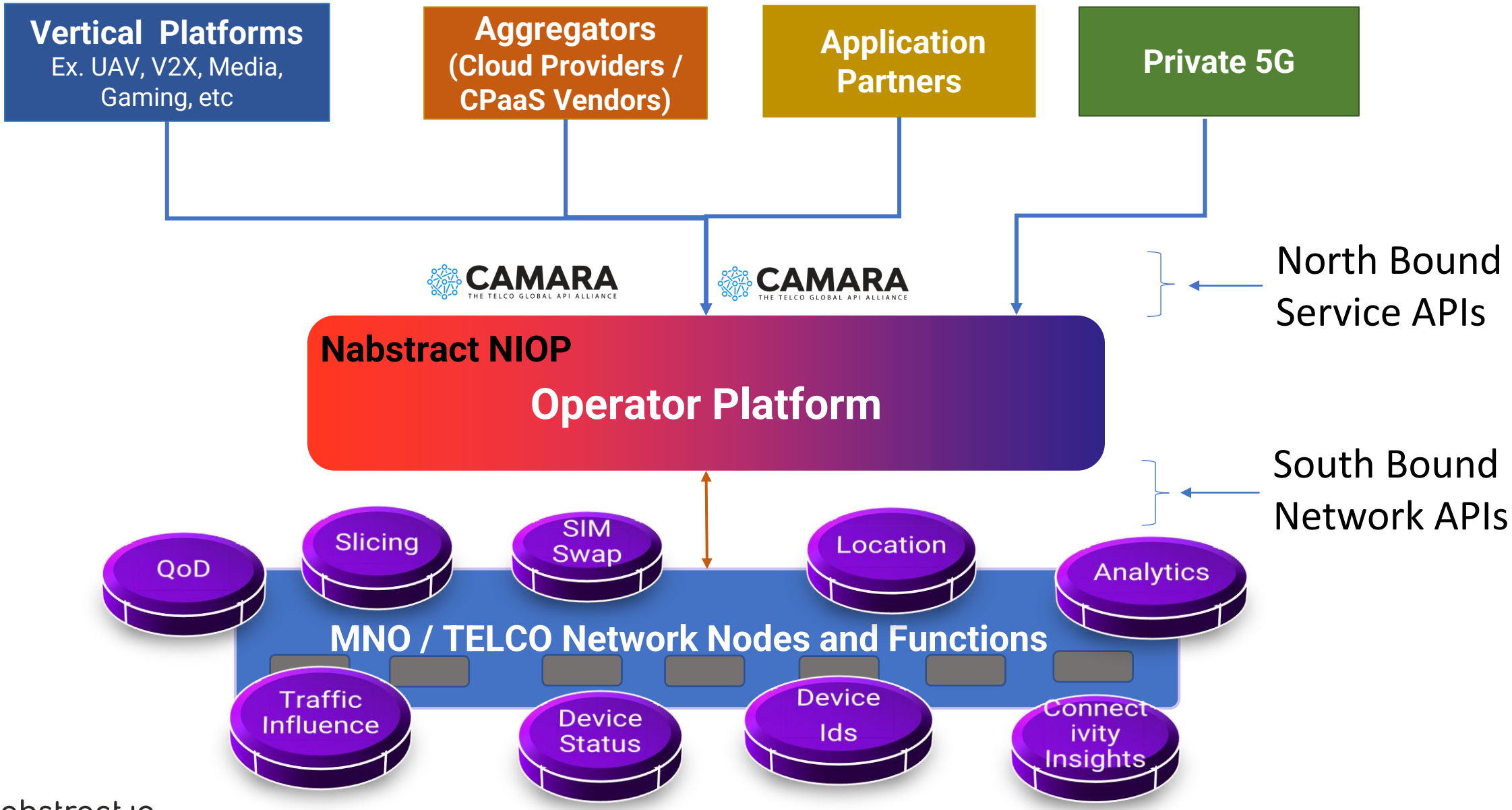
What is required to facilitate Network Monetisation

- Authentication and Authorization
- Service API to Network API Transformation
- Consent
- Product Catalogue
- Developer / Application Management
- Agreements / SLAs
- Network resource coordination
- Cloud resource coordination
- Seamless across networks - Federation

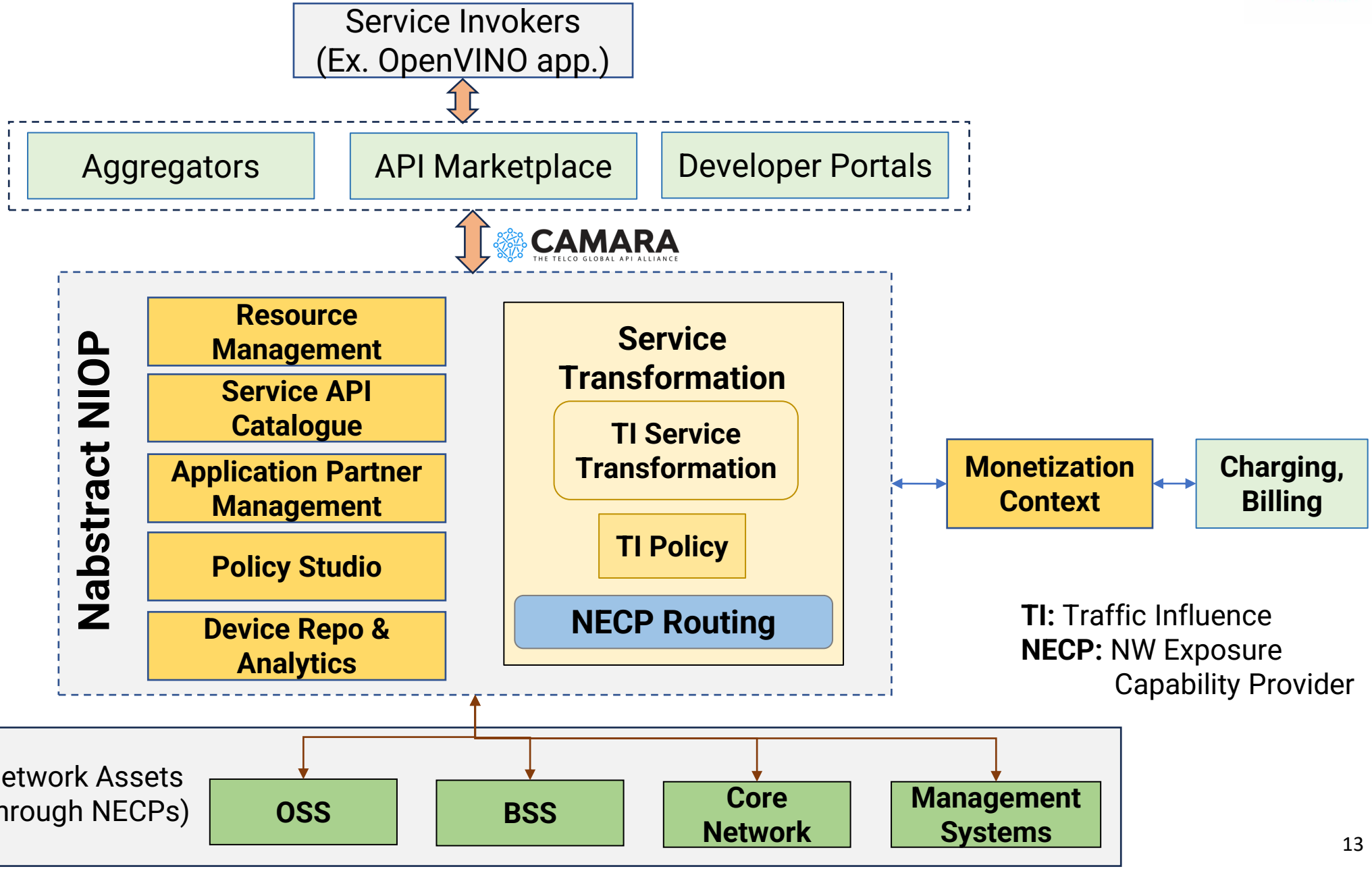
Resources exposed to Applications



Nabstract Platform provides the GSMA Operator Platform Capability



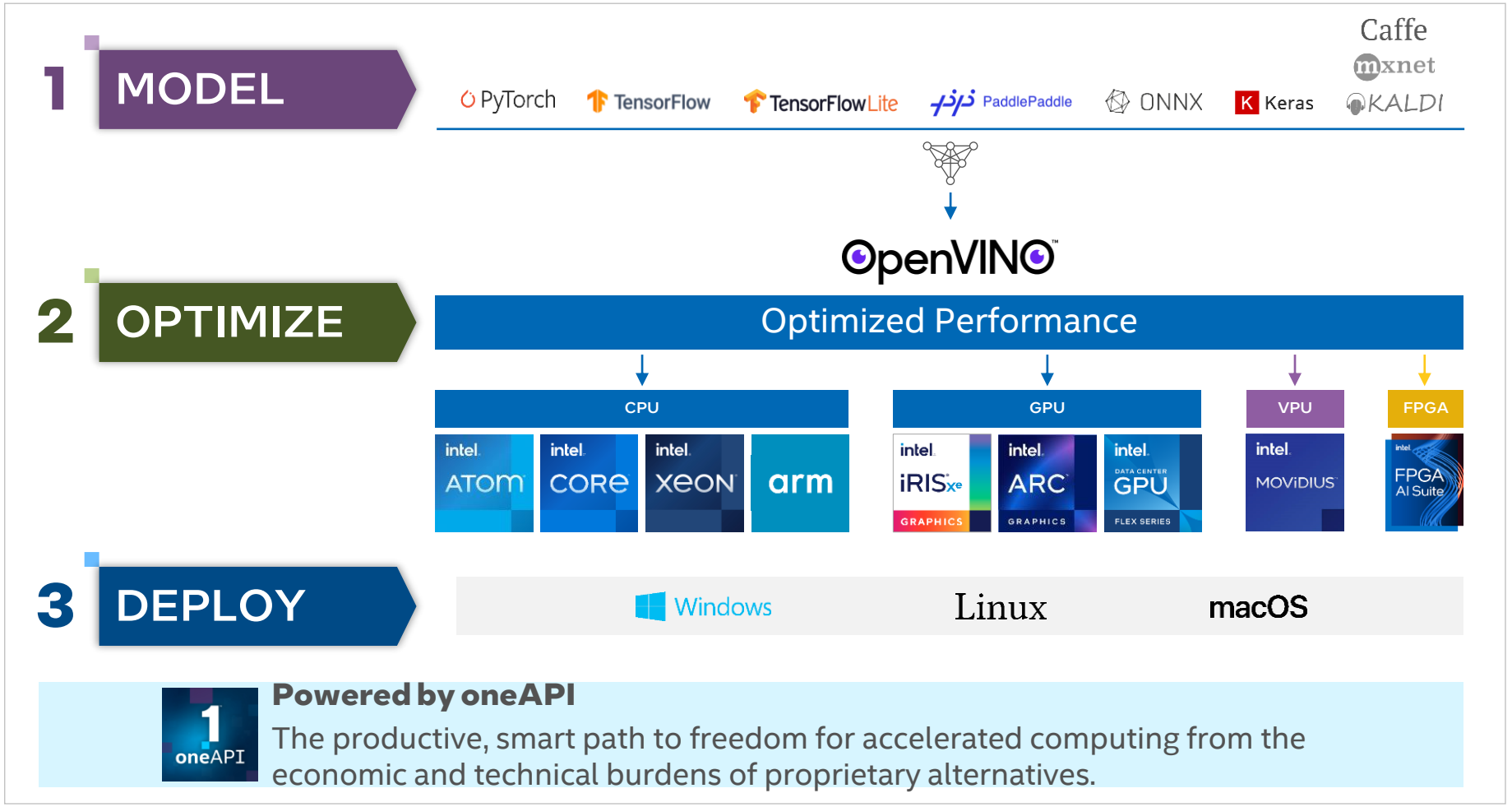
Service Transformations in Nabstract Platform



OpenVINO™ Toolkit Overview

Fast, accurate results with high-performance, deep learning inference

Convert and optimize models, and deploy across a mix of hardware and environments, on-premises and on-device, in the browser or in the cloud

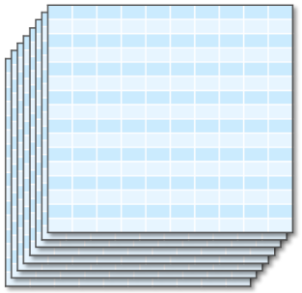


Powered by oneAPI

The productive, smart path to freedom for accelerated computing from the economic and technical burdens of proprietary alternatives.

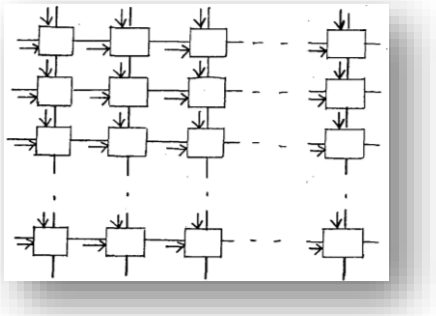
Intel® Advanced Matrix Extensions (Intel® AMX)

"Tiles"
2D Register Files

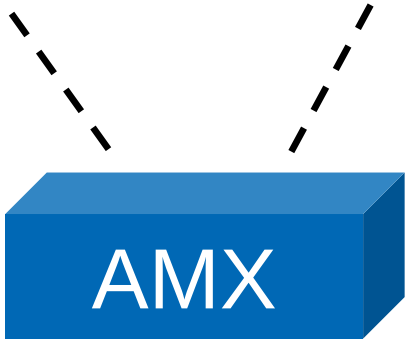


Store bigger chunks of data

"TMUL"
Tile Matrix Multiply



Compute larger matrices in single operation



Integrated on the latest generations of Intel® Xeon® Scalable processors for accelerating DL workloads

Supports BF16 (training/inference) and int8 (inference) data types

Unlock New Collaboration Opportunities

Operators aim to profit from their assets using 5G, Edge, and AI to optimize operations to enhance customer value

Intel Ecosystem Enabling Engine for a deeper partnership and new business

Recap

Holistic automation approach reduce operational complexity

AWS Cloud Continuum

Intel Partner Alliance and Network Builders program provides ready-to-use solutions

Intel open-source contribution such as OpenVINO provides developers with tools to innovate

Nabstract simplifies Network API managements

Nabstract unlock network programmability

Application owner can influence the network needed for their application

Learn more

To learn more about

how telecommunications companies are leveraging AWS services, https://aws.amazon.com/telecom/

AWS Telco Network Builder, https://aws.amazon.com/tnb/

Intel community working together to innovate the network from edge to cloud, https://networkbuilders.intel.com/communities/network

Nabstract solutions, https://www.nabstract.io/

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Thank you!

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Amazon Web Services

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Nabstract

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Intel

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