
AWS
re:Invent
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TLC201

Reinventing communications together

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Telecom strategic focus

Orchestrate a secure, scalable, software-driven network

Transform and automate for the future of business



Accelerate innovation to monetize 5G, edge, and enterprise transformation

Ignite your data to predict and personalize every interaction with AI/ML

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Networks, cloudified

ORCHESTRATE A SECURE, SCALABLE, SOFTWARE-DEFINED NETWORK

Cloud-native 5G core, RAN & edge

Put your 5G network to work and build a scalable, fully configurable software-defined telco network, faster than ever before

Private and public MEC

Networks, software-defined and delivered in the cloud for optimal efficiency, minimum cost, and future-proof scalability

Deep partner ecosystem

Providing choice and flexibility to deliver best-in-class services to meet the needs of CSPs



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Reinventing cloud-native 5G networks

BUILD



Accelerate TTM and reduce TCO by reinventing how 5G networks are built and deployed

OPERATE



Bring the agility of the cloud to automate operations and scale on demand

ORCHESTRATE



Automate new service rollouts with end-to-end visibility; enable AI for performance monitoring and infrastructure deployment

MONETIZE



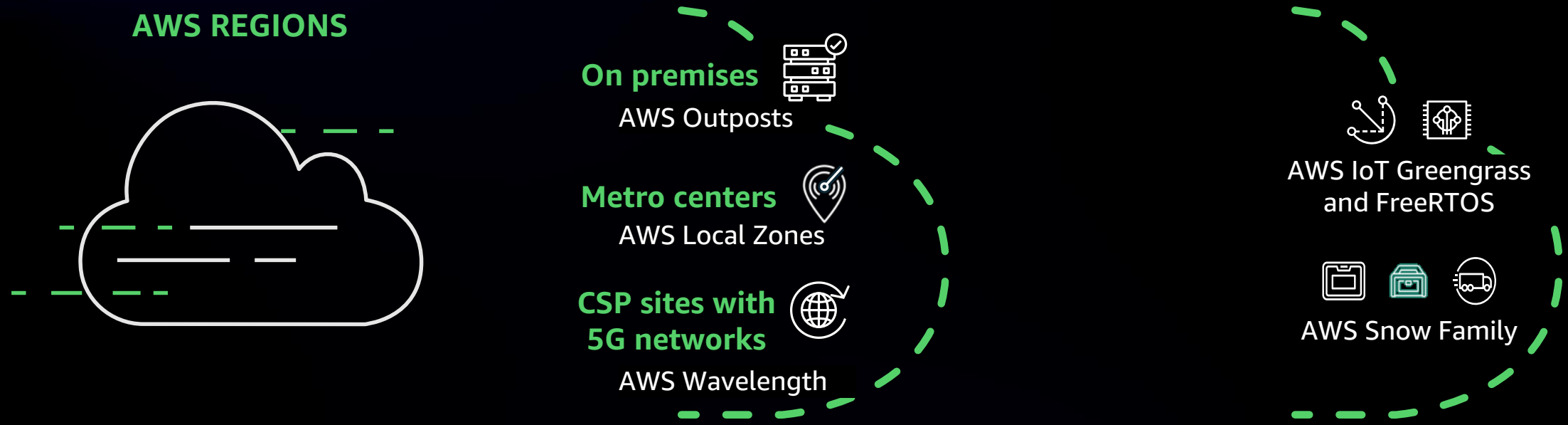
Monetize the network from core to edge; provide new managed services and a reimagined customer experience

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AWS edge cloud continuum

DELIVERING CLOUD WHERE CUSTOMERS NEED IT



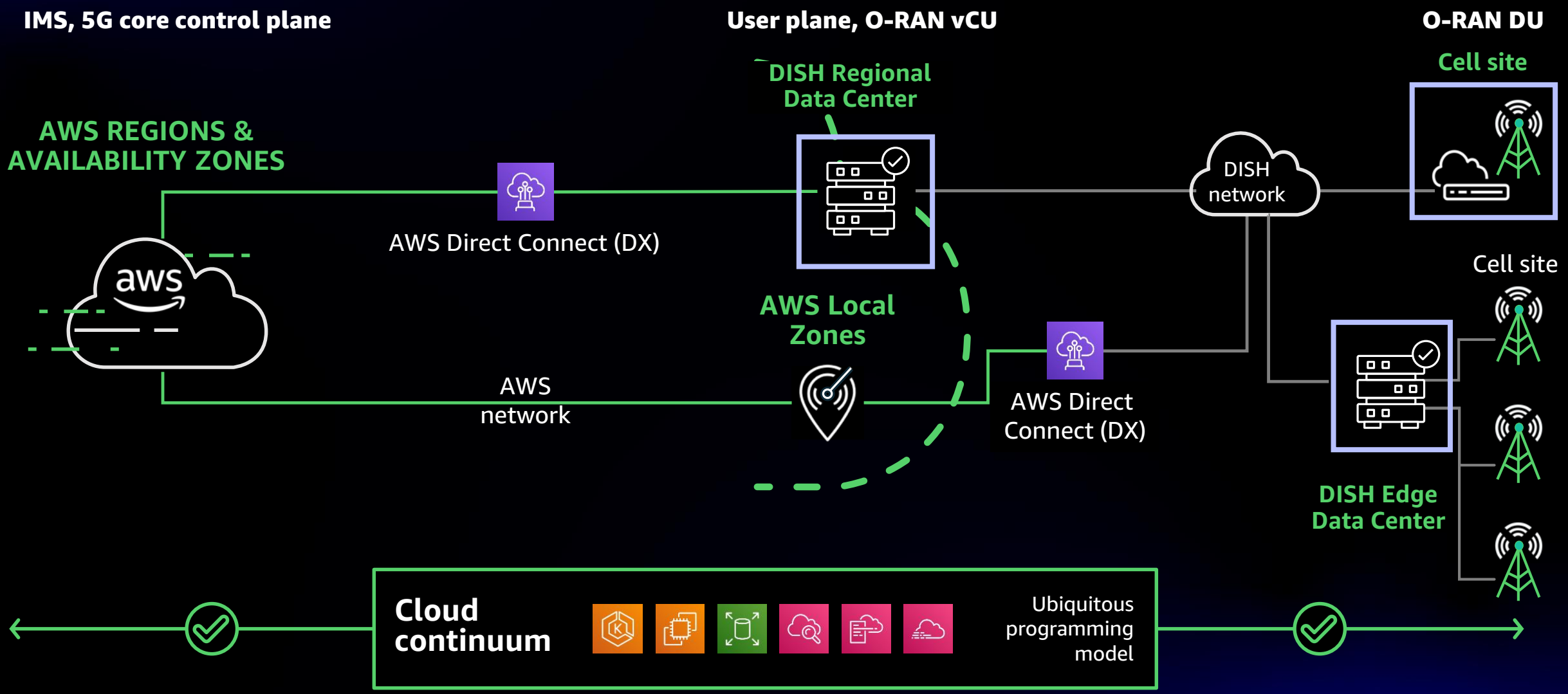
For most use cases

For low-latency, local data processing, data residency

DISH Wireless – America's first cloud-native 5G network from core to edge

We're reimagining connectivity through new platforms, new business models, and new ways of thinking to meet the convergence of wireless, data analytics, AI, and the cloud. This will **reimagine the customer experience.**

DISH Wireless network architecture on AWS



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Nokia 5G Core on AWS for DISH networks

COST SAVINGS (TCO)

Infrastructure and platform experts, combined with the best of 5G functions

PRODUCTIVITY

DevOps model

OPERATIONAL RESILIENCE

Rapid buildout and networking

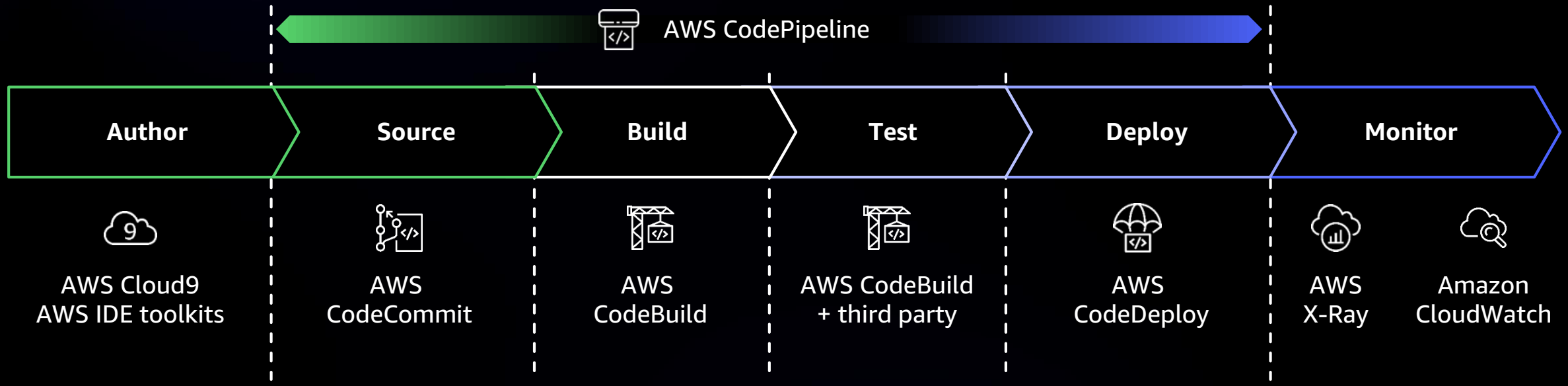
BUSINESS AGILITY

Consistent resource creation with dynamic scaling

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AWS CI/CD for modern software delivery applied to NFV



Build NFs (by **network vendors**) › **Deploy NFs** (on **AWS** infrastructure) › **Operate** (in **telco** network)

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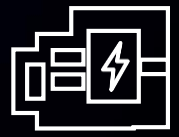
NFV on Nitro stack and in-house silicon



Nitro Hypervisor

Lightweight hypervisor

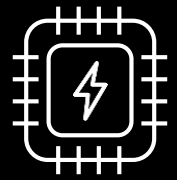
Memory and CPU allocation



Nitro Card

Elastic Network Adapter

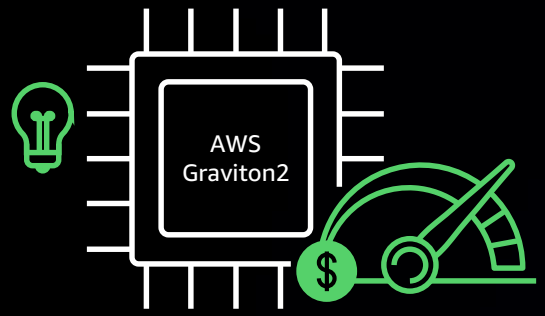
Monitoring and security

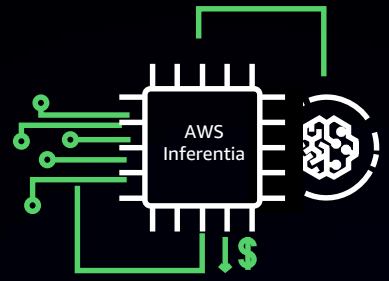


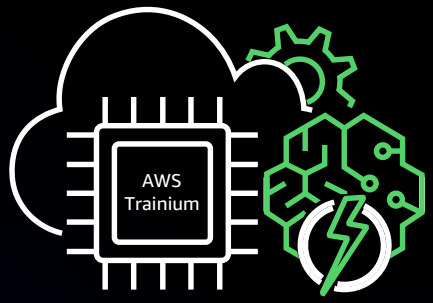
Nitro Security Chip

Protects hardware resources and directly on motherboard

Benefits of virtualization with close to bare-metal performance & Security for NFV workloads







AWS Graviton2

20% lower cost, 40% better price-performance vs. comparable instances

Power and footprint efficient for telecom workloads

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Mavenir O-RAN on AWS for DISH networks

INDUSTRY FIRST

Partnering with a leading cloud expert to deliver the first cloud-native 5G solution

AUTOMATION

CI/CD capability to accelerate our build and delivery

INNOVATIVE TECHNOLOGY

5G on AWS Outposts/AWS Graviton2/Nitro

AWS CLOUD BENEFITS

Common security model, operating model, and programming model

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Operations, simplified

TRANSFORM AND AUTOMATE FOR THE FUTURE OF BUSINESS

Enterprise IT transformation

Leverage best-in-class IT in your own organization with scalable, cost-optimized cloud infrastructure

BSS/OSS transformation and automation

Drive maximum efficiency, flexibility, and customer satisfaction with modern service design, delivery, and billing

Network orchestration/automation

Improve service and support across every channel with voice, chat, and transcribe services



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OSS/BSS maturity on AWS

30+ AWS Partners/vendors

amdocs, BearingPoint // Beyond, blueplanet a division of Ciena, ERICSSON, ETIYA, Intraway, MATRIXX SOFTWARE, mycomOSI, NETSCOUT, NOKIA, SIGMA A DIVISION OF HANSEN, qvantel, Hewlett Packard Enterprise, COMARCH, IBM, triPica., TIBCO, Netcracker, csg, LOGISENSE

ECOSYSTEM

50+ customers

vodafone, T-Mobile, ALTAN REDES, Globe, orange, BT, TATA CONSUMER PRODUCTS

REFERENCES

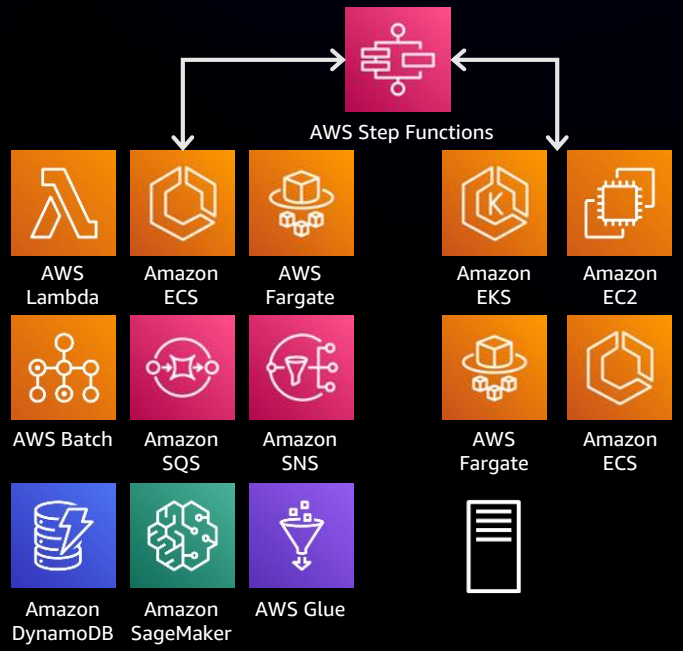
20+ native services



ARCHITECTURE FRAMEWORK

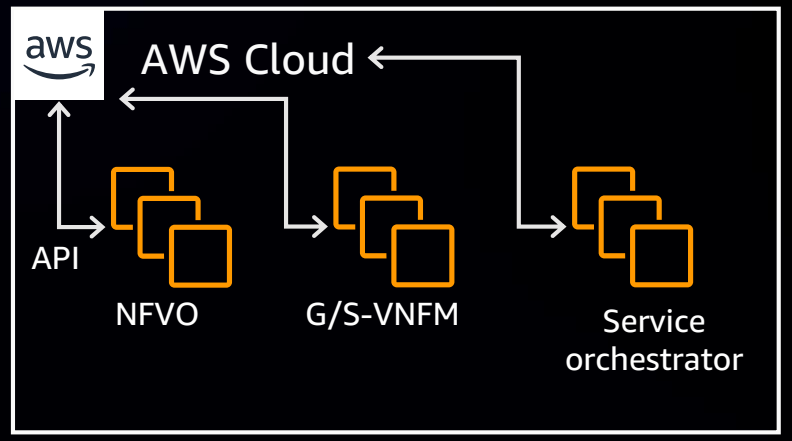
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Network orchestration on AWS



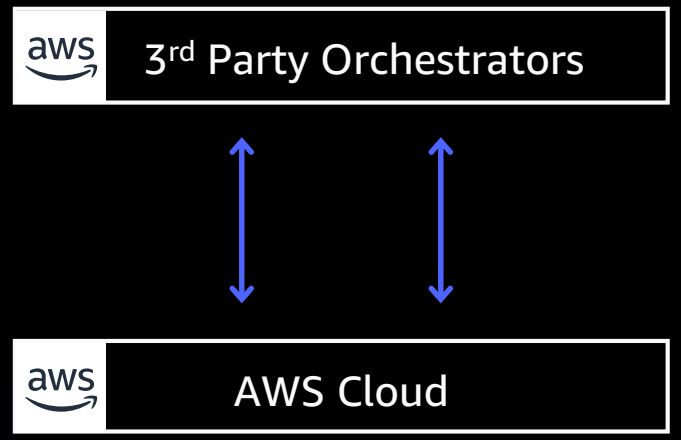
AWS-native tools

Cloud-native orchestration



Hosting NFVO/VNFM on AWS with API interworking

MANO model with AWS service integration provides NFVI and VIM layer and more automation tools



Using third-party orchestration platforms

Using ONAP or OSM, positioning AWS as NFVI and VIM layer

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OSS for 5G

VERIZON

Going cloud-native for their operational challenges solved cost and speed issues

AWS provided the compute power and ability to quickly analyze the best way to provision the services required

Verizon to quickly scale and support its operational applications requirements



Customer experience, reimagined

IGNITE YOUR DATA TO PREDICT AND PERSONALIZE EVERY INTERACTION WITH AI/ML

AI/ML for CX

Improve the customer experience with predictive network maintenance, anticipating customer needs, customizing relevant offers, and reducing fraud

Data and analytics

Turn your customer data into insight with powerful analytics and rich personalization

Ecosystem of partner ISVs

Provide choice and flexibility to deliver best-in-class services that meet the needs of CSPs



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Deeper and faster insight



Data strategy

+



Data management processing architecture

+



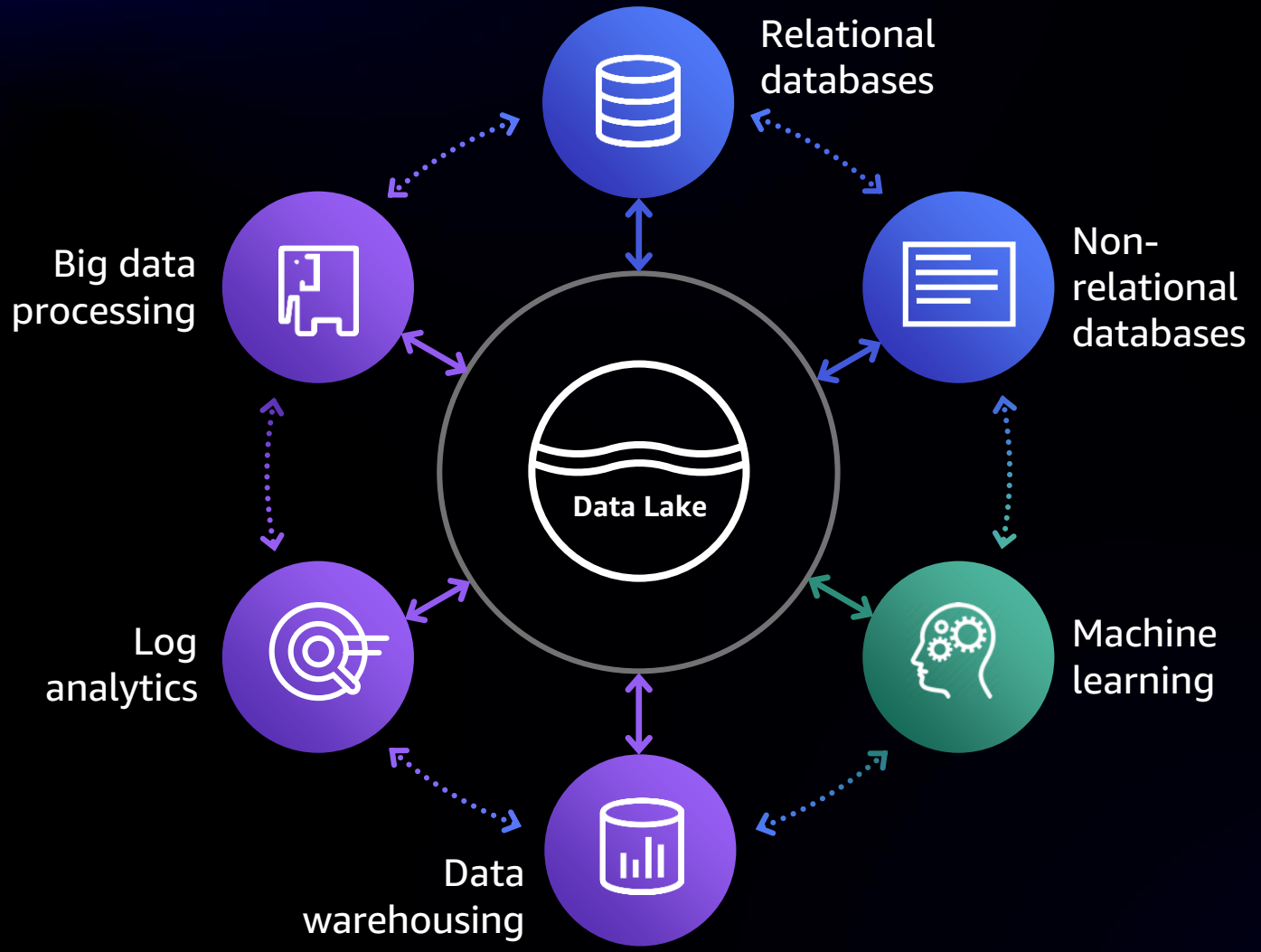
AI/ML to enhance outcomes

= Reimaging CX

Predictive maintenance	Customer churn management	Personalized offers	Fraud detection

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Modern data architecture in the cloud



Scalable data lakes

Purpose-built data services

Seamless data movement

Unified governance

Performant and cost-effective

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Modern data architecture in the cloud



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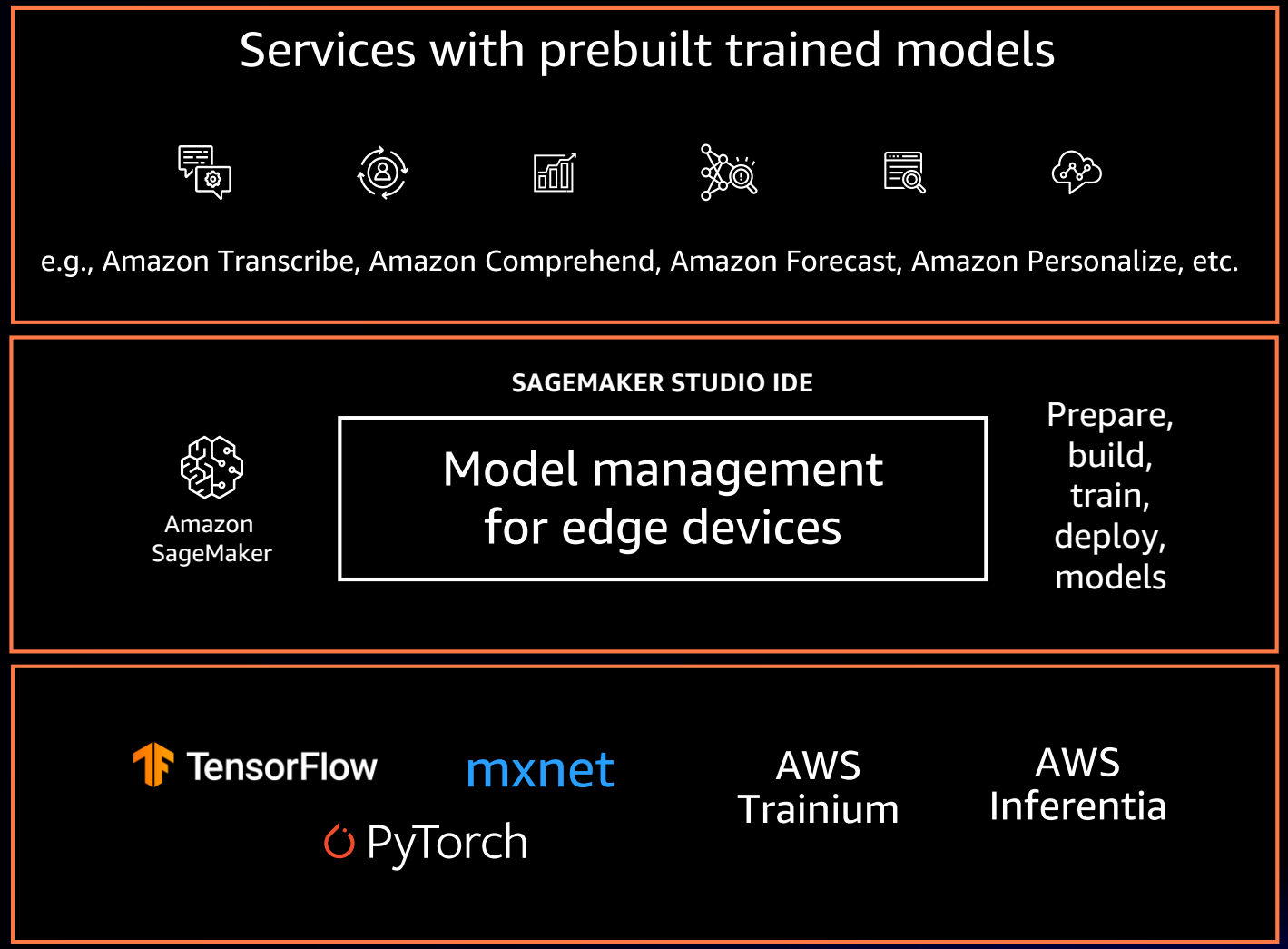
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Applying the AI/ML stack to telco data

AI services

ML services

Frameworks & infrastructure



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AI/ML

TELIA COMPANY

Common data foundation – telco grade, real-time, multi-country, scalable – using serverless data lake and fit-for-purpose cloud

Democratization of data – self-serve analytics for visualization and data-driven decisioning across the organization

Value from data – customer value management (CVM), next-best action, and rich personalization at scale along a digital omni-channel customer experience



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Growth, unlocked

ACCELERATE INNOVATION TO MONETIZE 5G, EDGE, AND ENTERPRISE TRANSFORMATION

Monetize 5G

Deploy public and private networks with industry-leading edge compute capabilities to build tomorrow's services

B2B cloud practice

Be the engine of next-generation transformation for enterprise customers with our cloud infrastructure, expertise, and developer community

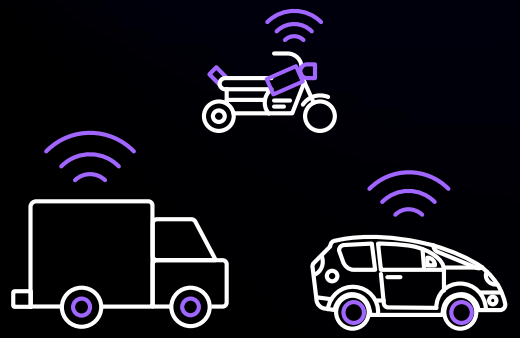
ISV and developer ecosystem

Consistent developer experience – same APIs, tools, and functionality as in the AWS Cloud



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Customized offerings



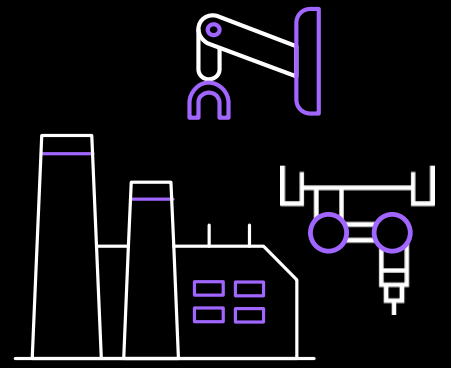
Transform transportation with connected and autonomous vehicles

Cellular
+ AWS Wavelength



Build smarter products and user experiences in homes, buildings, and cities

Wi-Fi + broadband +
+ Ring Security, etc.



Improve the performance and productivity of industrial processes

Private network + IoT
+ Amazon Monitron and
Amazon Lookout services

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Edge developer ecosystem at the network edge



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Private networks

VERIZON & CORNING

One of the largest optical cable manufacturers worldwide – providing the backbone of today's telecommunications

Using AWS Outposts and Verizon 5G Edge, provide autonomous navigation and sensing as a service directly to the factory floor

The solution allows Corning to manage data quickly, predict issues, monitor defects, and improve throughput



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PREVIEW

AWS Private 5G

Managed service to deploy, operate, and scale your private cellular networks



Order and deploy a private mobile network with just a few clicks in the AWS console

Automatically configures, deploys, and manages the mobile network

Scales easily to accommodate more connected devices or increase in network traffic

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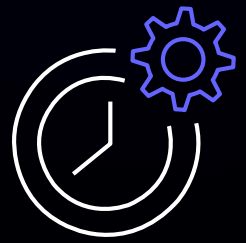
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AWS Private 5G – Value proposition

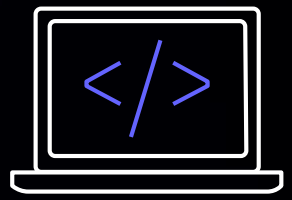
Bringing the cloud model of consumption to private 5G networks



Hassle-free procurement using the AWS Management Console or APIs



Start as small as you want, validate your business requirement, and then scale up as needed



A pricing model where you pay for the throughput capacity you need and not the number of devices you connect



Integrated with AWS Identity and Access Management (IAM) for operational consistency



Same pace of innovation as in the cloud

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Potential collaboration opportunities for Communications Service Providers



Opportunities

- Licensed Spectrum operations for AWS Private 5G
- RF planning/site deployment/installation services to enterprises
- On-going maintenance and support services for AWS Private 5G
- Joint go-to-market to address enterprise private 5G market



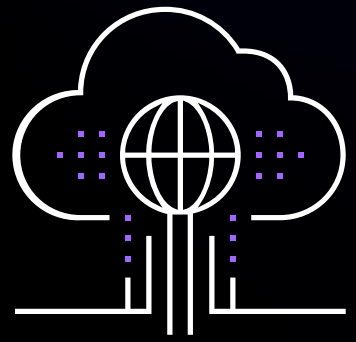
Benefits to the CSP

- Monetize and increase utilization of spectrum
- Faster time-to-market for enterprise private 5G solutions
- Move up the value chain with managed services and applications built for private 5G solutions

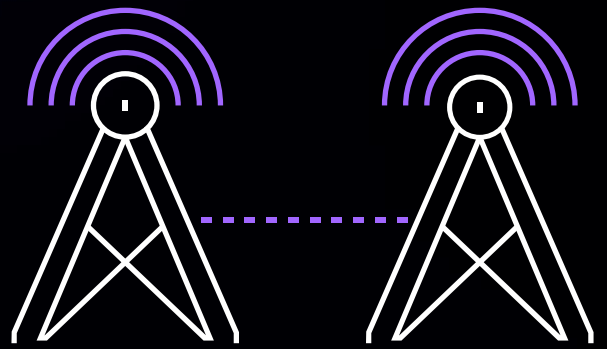
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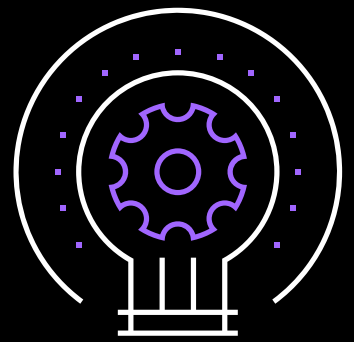
Summary



Most advanced and secure global infrastructure to accelerate the delivery of 5G



Deepest telecom partner network to differentiate your business



Fastest rate of innovation to enable the delivery of new services

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Thank you!

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