Hewlett Packard Enterprise

HPE TELECOMMUNICATIONS SOLUTIONS

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HEWLETT PACKARD ENTERPRISE IN TELECOMS

HPE by the numbers

5,000
dedicated professionals focused purely on telecommunications

2,000
live software projects at any one time

50
software solutions designed specifically to deliver services, manage and operate Communications networks

700m
mobile subscribers connect to HPE HSS / HLR SW

650m
DEG users, link iPhone with Apple Watch

36m
Lines of software code

50 Open 5G
projects currently in progress WW

HPE is a driver
5G standards 3GPP Release 16 – TS.632 (UDICOM)

Secure by design
Designed from the infrastructure up with silicon security to complete observability

500 Operators
Using HPE charging and mediation Software

500 OSS
Deployments around the world

HPE HOLDS A LEADING POSITION IN TELECOM US / GLOBAL

AT&T
Subscriber Data Management
MEC / Orchestration

Subscriber Data Management
Device Entitlement
VRAN

du
Service Activation
Hybrid Cloud Mgmt
Mediation

SK telecom
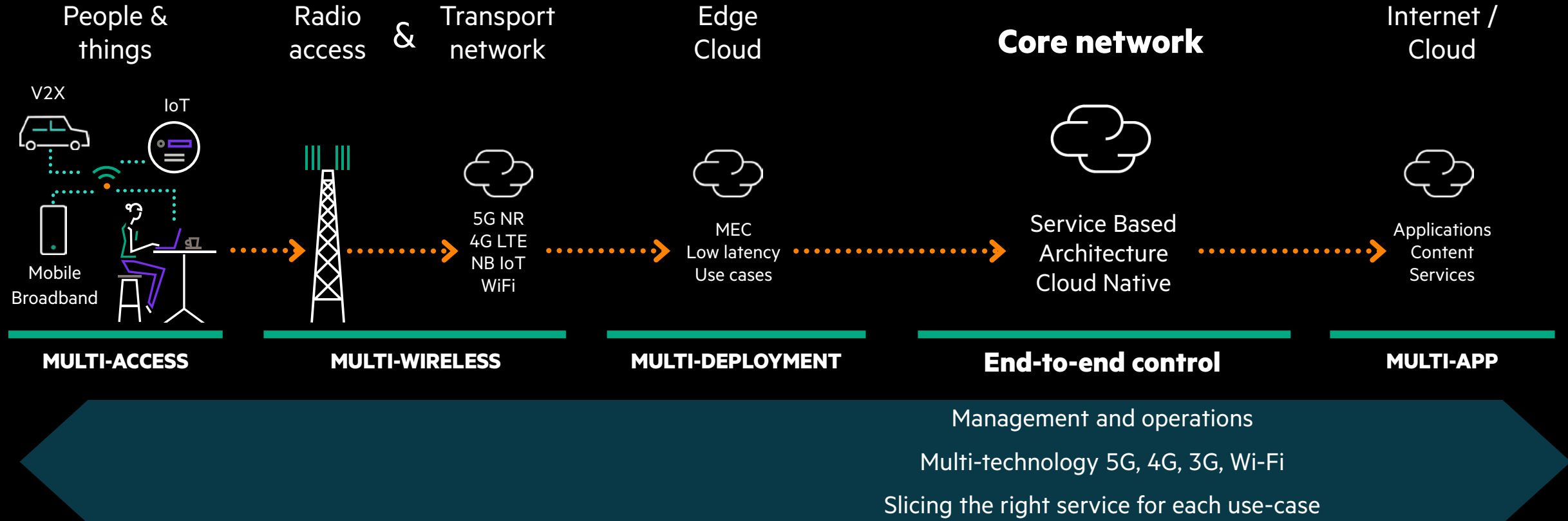1st 5G multivendor
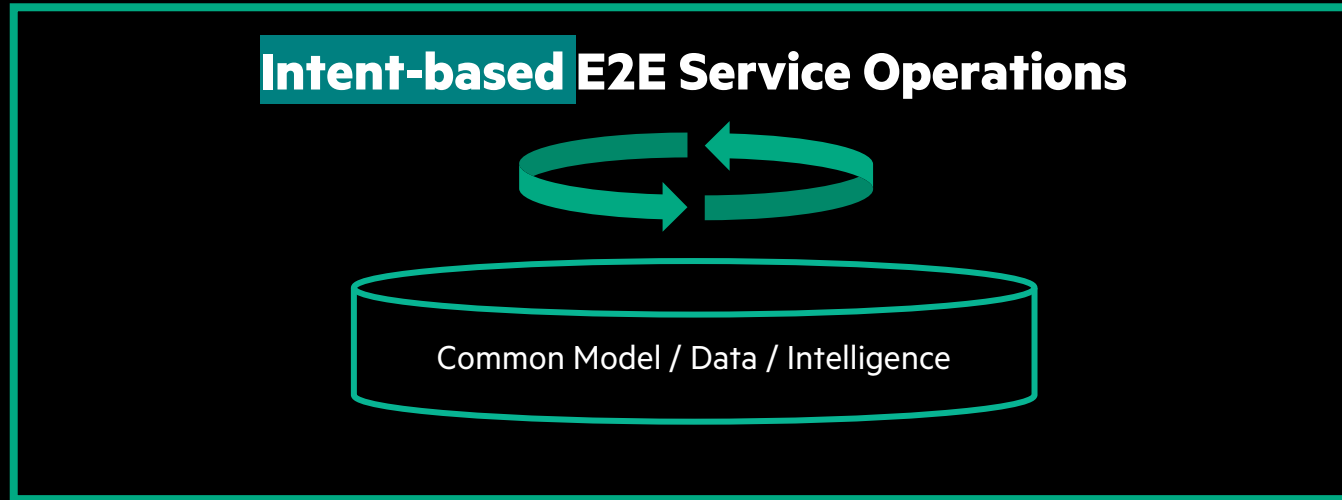End to End Network

T··
Shared Data Environment

vodafone
Device Entitlement

5G NETWORK - EDGE TO CORE

5G Core enables service innovation, increased security and reduced costs

People & things

V2X

IoT

Mobile Broadband

MULTI-ACCESS

Radio access & **Transport network**

5G NR
4G LTE
NB IoT
WiFi

MULTI-WIRELESS

Edge Cloud

MEC
Low latency
Use cases

MULTI-DEPLOYMENT

Core network

Service Based
Architecture
Cloud Native

End-to-end control

Internet / Cloud

Applications
Content
Services

MULTI-APP

Management and operations

Multi-technology 5G, 4G, 3G, Wi-Fi

Slicing the right service for each use-case

HPE ORCHESTRATION SOLUTIONS

- Service layer

Intent-based E2E Service Operations
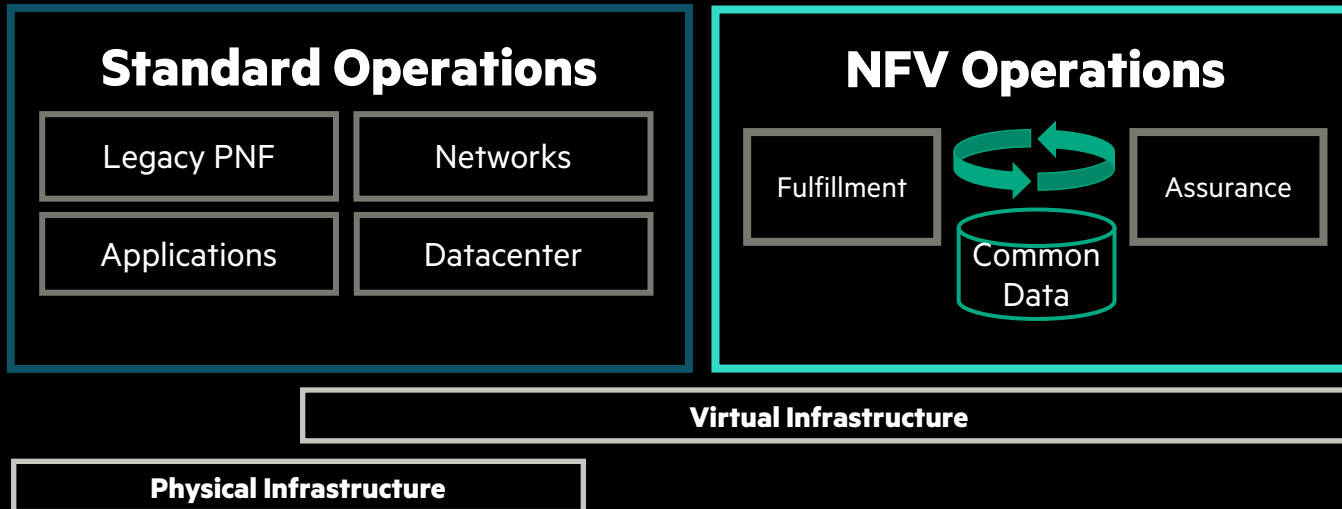
Common Model / Data / Intelligence

End-to-end Service Operations:

HPE Service Director
HPE Edge Orchestrator (aaS)

- Resource layer
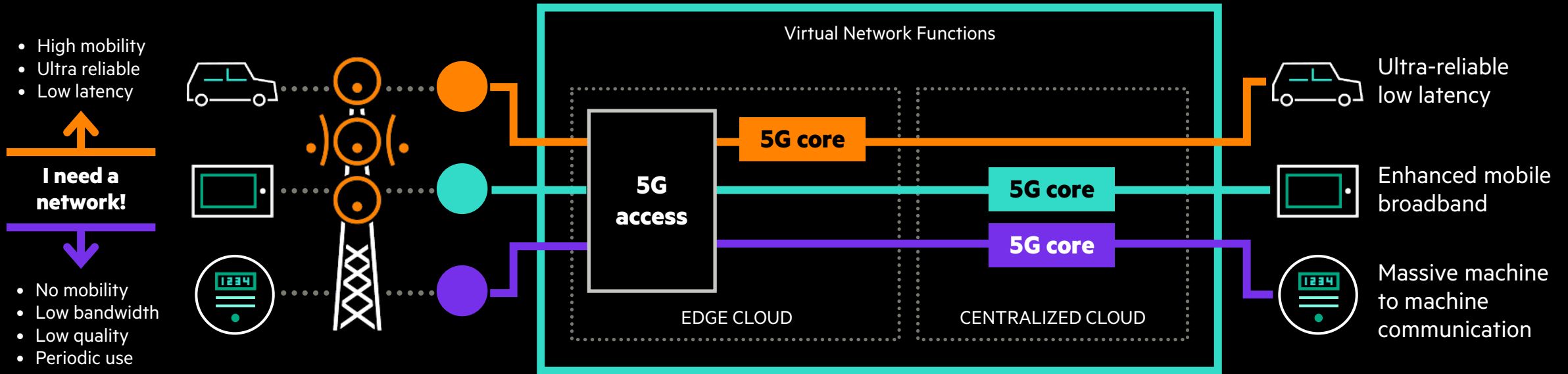
OSS for PNF and Logical Resources:

HPE OSS solutions portfolio

Standard Operations

Legacy PNF	Networks
Applications	Datacenter

NFV Operations

Fulfillment		Assurance

Common Data

Operation of VNF and NFV Infrastructures, i.e. MANO:

HPE NFV Director

Virtual Infrastructure

Physical Infrastructure

5G NETWORK ENABLES NETWORK SLICING THROUGH THE RAN

- High mobility
- Ultra reliable
- Low latency

I need a network!

- No mobility
- Low bandwidth
- Low quality
- Periodic use

Virtual Network Functions

5G access

5G core

5G core

5G core

EDGE CLOUD

CENTRALIZED CLOUD

Ultra-reliable low latency

Enhanced mobile broadband

Massive machine to machine communication

Multiple logical networks over the same network infrastructure, addressing different needs

- A network slice can ensure service quality in terms of speed, quality, latency, reliability, security
- A network slice can span across multiple subnets, i.e.: RAN subnet, Core Network subnet, Transport subnet, Enterprise subnet
- A slice can be commissioned across different vendors and operators

HPE TELCO INFRASTRUCTURE OFFERINGS

Reducing the risk of disaggregating IT infrastructure from Network Functions

Benefits Improvement
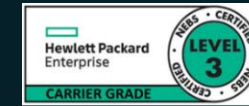
Risk Mitigation

Telco Blueprints, Telco Validated Designs, Telco Reference Configurations

Telco Software Defined Infrastructure Toolset

Open Distributed Infrastructure Management

Full Stack Telco Compliance and Performance Validation

GreenLake for Telco

Improving the net business benefits for open telco clouds

HPE OPEN RAN INFRASTRUCTURE APPROACH
End to End Open RAN Infrastructure Enablement

Open RAN Optimized Platforms

- HPE ProLiant DL110 Gen10 Plus
- EL8000t
- DL360 Gen10
- DL380 Gen10

DL360 Gen10   EL8000t

DL380 Gen10   DL110 Gen 10 Plus

Solutions

- Supports adjacency functions such Fronthaul Gateway and Cell Site Router
- Telco Blueprints
- Staging/Automated management

Community

- ORPC
- O-RAN Alliance
- TIP Open RAN Group

O-RAN ALLIANCE

TELECOM INFRA PROJECT

Technology & Integration Partnerships

- CPU partners
- Accelerator partners
- Smart NIC partners
- VIM partners
- NEPs & SIs
- Hyperscalers

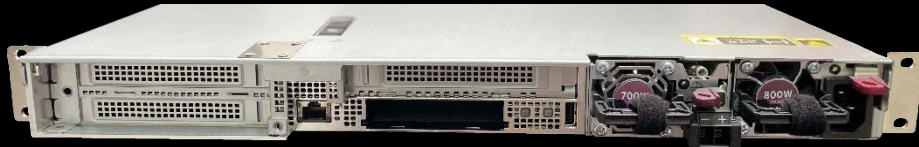Microsoft Azure   SAMSUNG   NOKIA

Google Cloud   ERICSSON   redhat

Tech Mahindra   vmware   intel

+more

OPEN RAN OPTIMIZED PLATFORM
HPE ProLiant DL110 Gen10 Plus Telco Server

Front

Rear

FORMFACTOR – ideal for space constricted far edge locations
- 1U
- Shallow depth (~17" or ~44 cm)
- Front cabling
- Front mounting (front ears, no racks)

Purpose-built

DENSITY – ready to handle tomorrow's growth today!
- 4 x16 PCIe 4.0 slots
- Direct Connect of Radios per O-RAN 7.2
  - Supports up to 18 Narrow Band RRU @20Mhz
  - Supports up to 6 Midband RRU @100Mhz
- Single socket CPU to address low latency (with increased density)
- Supports transport adjacency functions, such as:
  - Fronthaul Gateway
  - Cell Site Router

Future-ready

CARRIER GRADE – ideal for harsh environments
- NEBS Level 3 and GR 3108 Class 1 Compliant
- -5C cold start, up to 55C with active air cooling (7 fans)
- Also, NEMA 3R enclosure supporting -40C to +60C outdoor grade deployment

Ruggedized

HPE GREENLAKE DELIVERS TELECOMMUNICATIONS AS-A-SERVICE

Pay only for what you use [1]

Scale as needed

Increase business agility

Choice and flexibility

Simplify operations

Speed time to market

"We were operating at **40%** commercial utilization;
with HPE GreenLake we are at **100%**."

– Large global telecommunications company