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Transforming to Digital Service Provider

How 5G Design, Virtualization and Automation enable operator's transformation to Digital Service Provider

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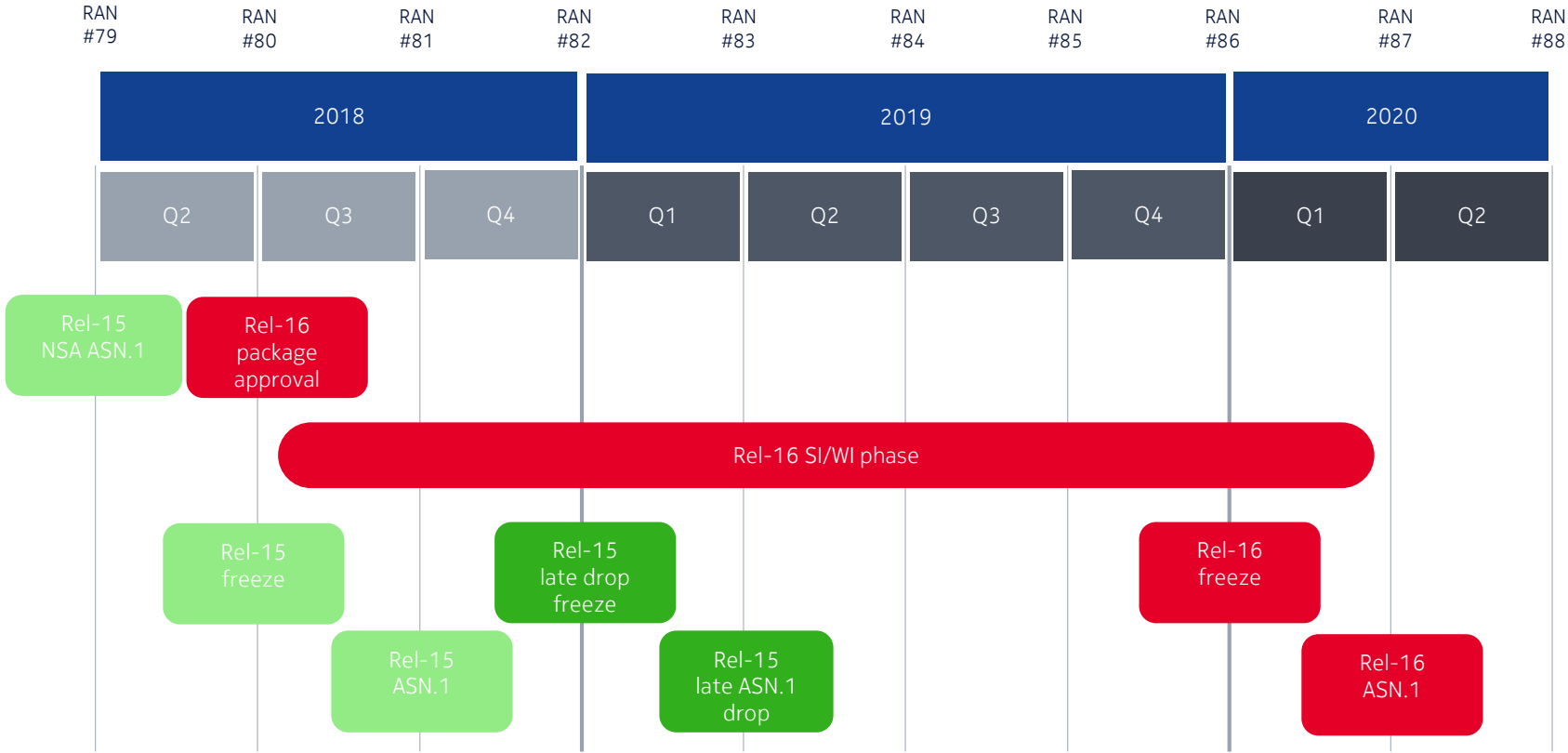
Head of Standardization
Nokia

India Meeting of 3GPP Executives on catalyzing 5G Launch in India
Le Meridien, New Delhi, 27-03-2018

Timeline (agreed at RAN#79 in Chennai)



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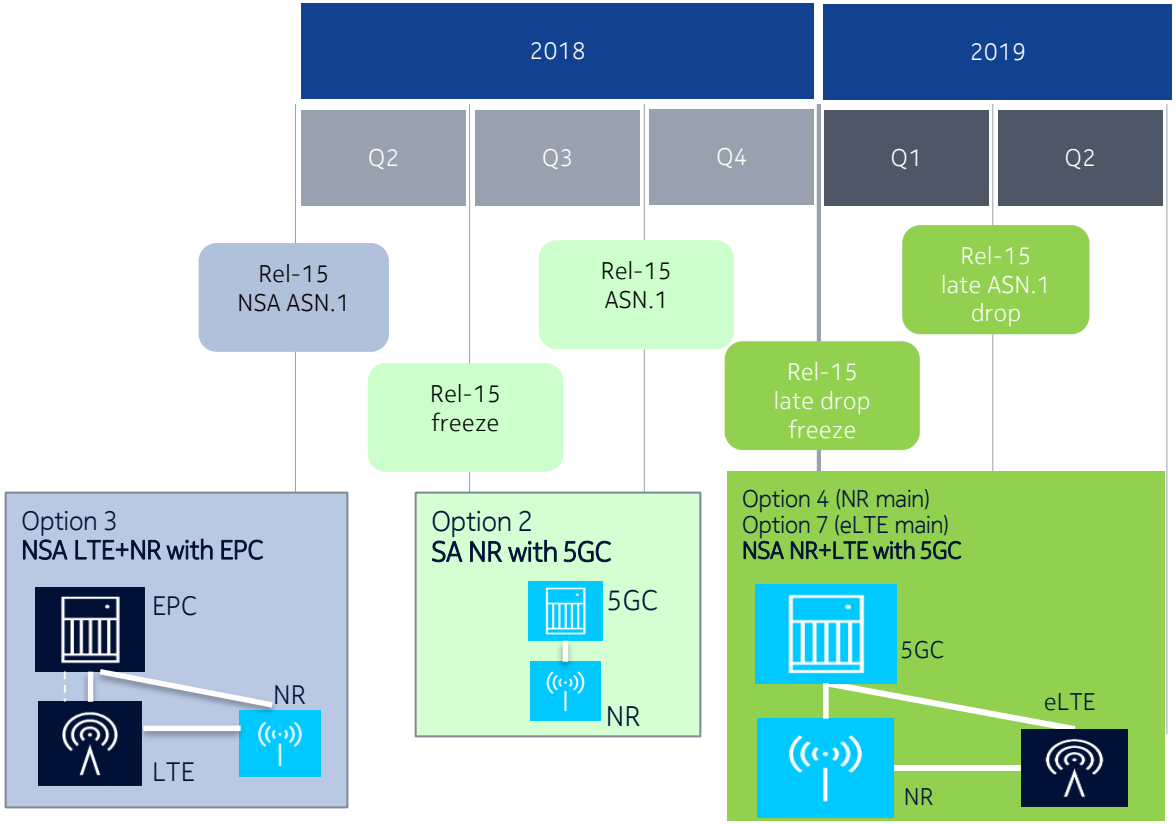
2018
2019
Q2
Q3
Q4
Q1
Q2
Rel-15
NSA ASN.1
Rel-15
freeze
Rel-15
ASN.1
Rel-15
late drop
freeze
Rel-15
late ASN.1
drop
Option 3
NSA LTE+NR with EPC
EPC
NR
LTE
Option 2
SA NR with 5GC
5GC
NR
Option 4 (NR main)
Option 7 (eLTE main)
NSA NR+LTE with 5GC
5GC
eLTE
NR

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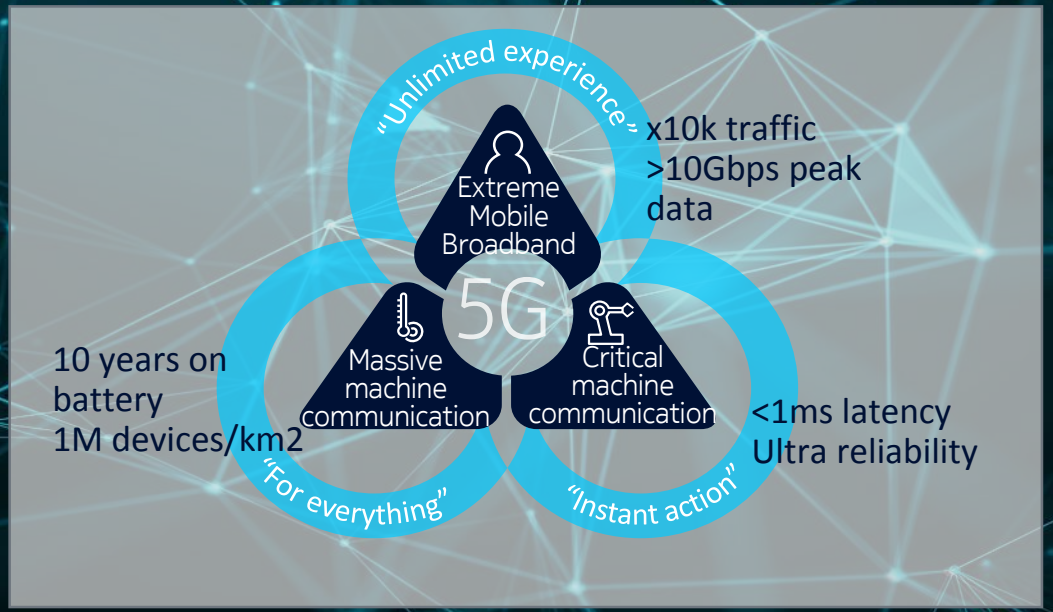
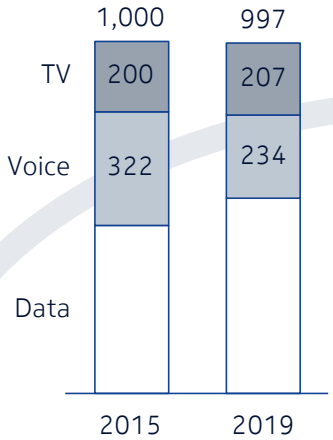
Digital Transformation with 5G



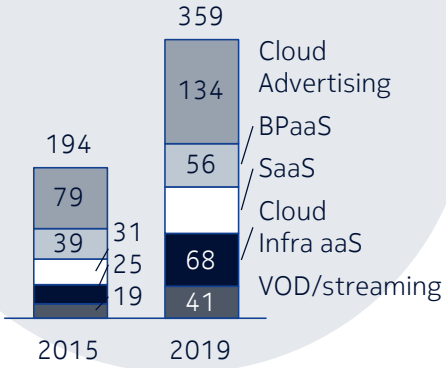
The economic incentive to find new revenue sources is clear for today's CSPs

Traditional CSP service revenues in mature markets* ($B) are flat



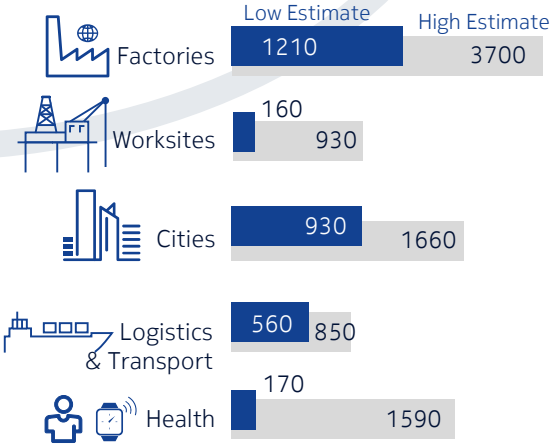
* Western Europe, Canada, USA, Japan, South Korea, Singapore, Australia, and NZ
Source: Gartner

Cloud Services ($B) have strong growth but value captured by CSPs has been limited



Source: Gartner
BPaaS = Business Processes as a Service

Future DSP markets ($B in 2025) offer revenue expansion for CSPs



Estimated 2025 value creation potential of the IoT
- *McKinsey Global Institute*

Value creation lies in novel services where network service performance is critical

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The future of digital service delivery from Digital Service Providers (DSPs)

Traditional CSP

- **Focus on "elephant" mass-market services** that can justify the cost & time
- **Expensive and slow** to get new service to market due to **complex** OSS/BSS systems, and **manual processes**

Cloud Transformation

- **Webscales** deliver rapid, personalized, on-demand services - leverage **cloud automation** but mainly **over the top delivery**
- **CSPs** starting to evolve with **NFV/SDN** to speed the delivery of network services

Future DSP

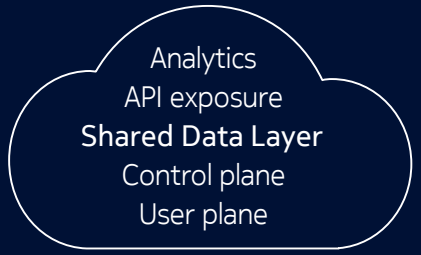
- Digital experience: broad array of new services that **combine cloud services and network resources**
- **Tailor virtual networks for each use case:** latency, bandwidth, security, choice of functions
- Agile network: services are **rapidly** trialed, deployed & scaled
- Open platform: **ecosystem of** cloud and network **players**

Source: Analysys Mason

New Markets | Faster New Services | Faster Time to Revenue | Higher Customer Satisfaction

Shared Data Layer

A paradigm shift towards a data centric network architecture

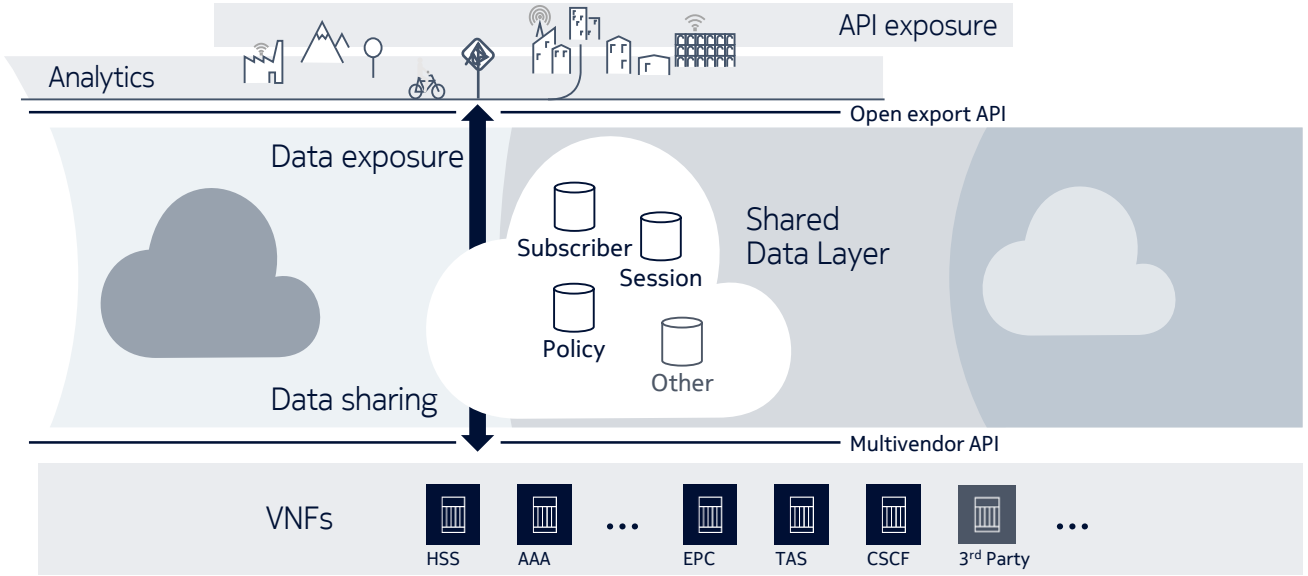


Shared Data Layer is Cloud optimized data layer, provides

1. Framework for stateless VNF architecture with unlimited linear scalability
2. Unbreakable Core with Geo-redundant Session Resiliency
3. Open ecosystem for data exposure and unified data analytics

The Role of the Shared Data Layer – key enabler for 5G

A paradigm shift towards a data centric network architecture



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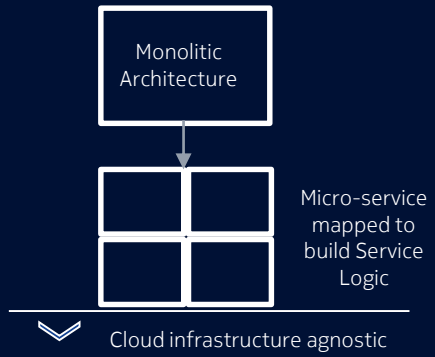
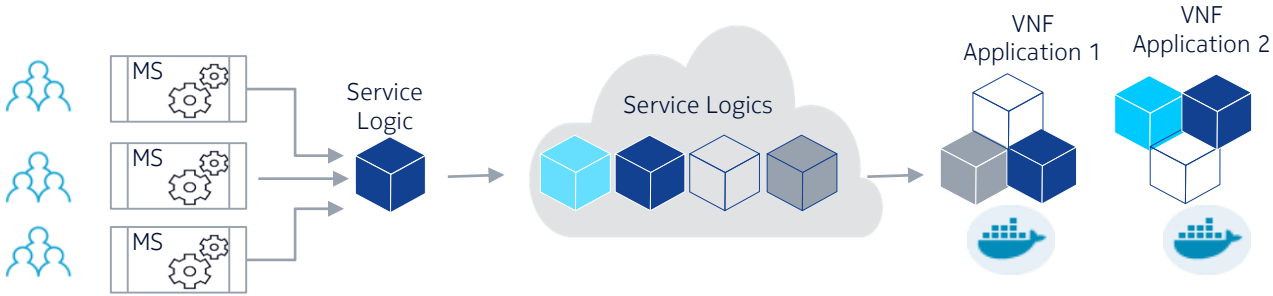
Service Based Architecture

Micro-services Design
VMs decomposed to independent services with reusable micro-services.



1. Simplified and independent deployments
2. Independent scalability, automation, testability, fault isolation, upgradability and manageability
3. Enables use of best of breed technology using Open interface

Micro services are mapped to build Virtual Machines (VMs) that can be deployed, scaled, upgraded, managed independently



Enables continuous Micro-service (MS) development & testing

Enables Continuous testing & integration in operator network

Continuous deployment & Automated life-cycle management

Benefits

1. Simplified and independent deployments
2. Independent scalability and automation
3. API Driven well defined interfaces
4. Enables use of best of breed Technology
5. Independence testability and fault isolation
6. Enables speed and agility

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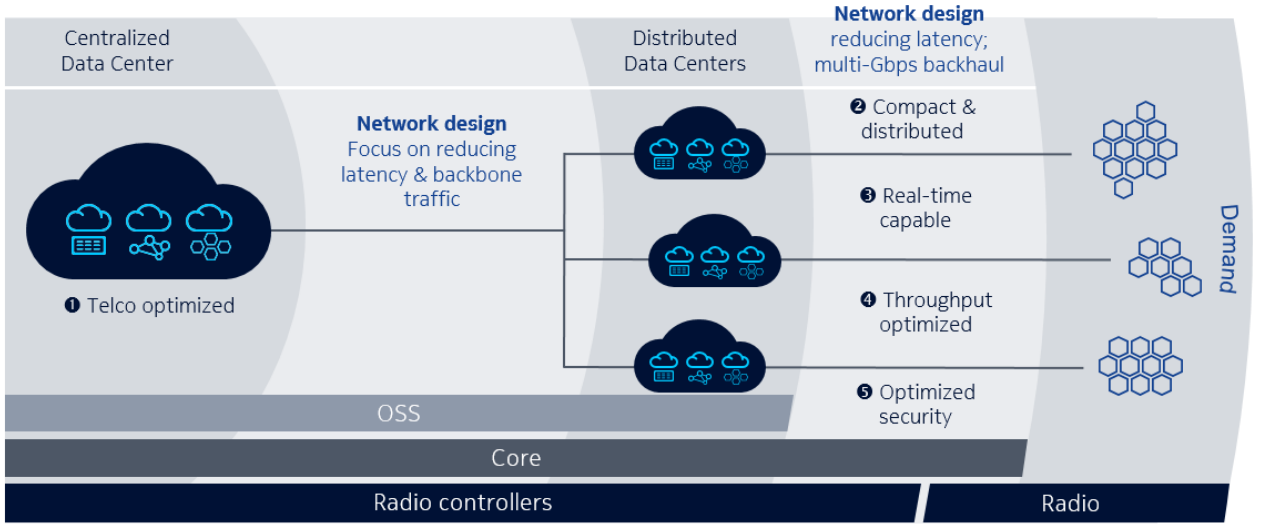
Distributed/Edge Cloud

Datacenter facility solutions for multi-layer cloud
Scalable from centralized datacenters to distributed edge clouds

Distributed cloud architecture driven by telco performance requirements



Leverage Multi-access Edge Computing as a platform for edge cloud for accelerating 5G use case creation

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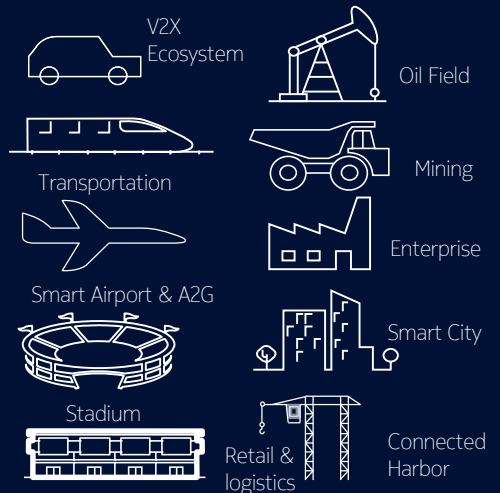
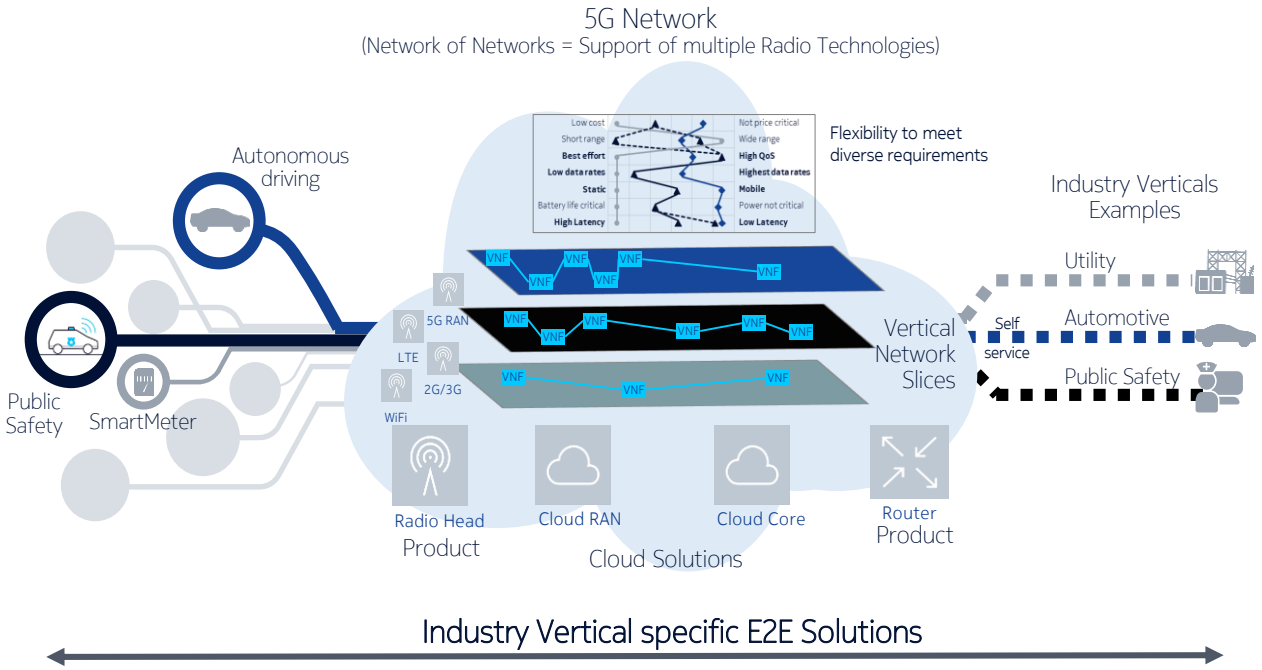
Network Slicing

Running multiple logical networks on a common physical infrastructure



Optimized service delivery for heterogeneous use cases



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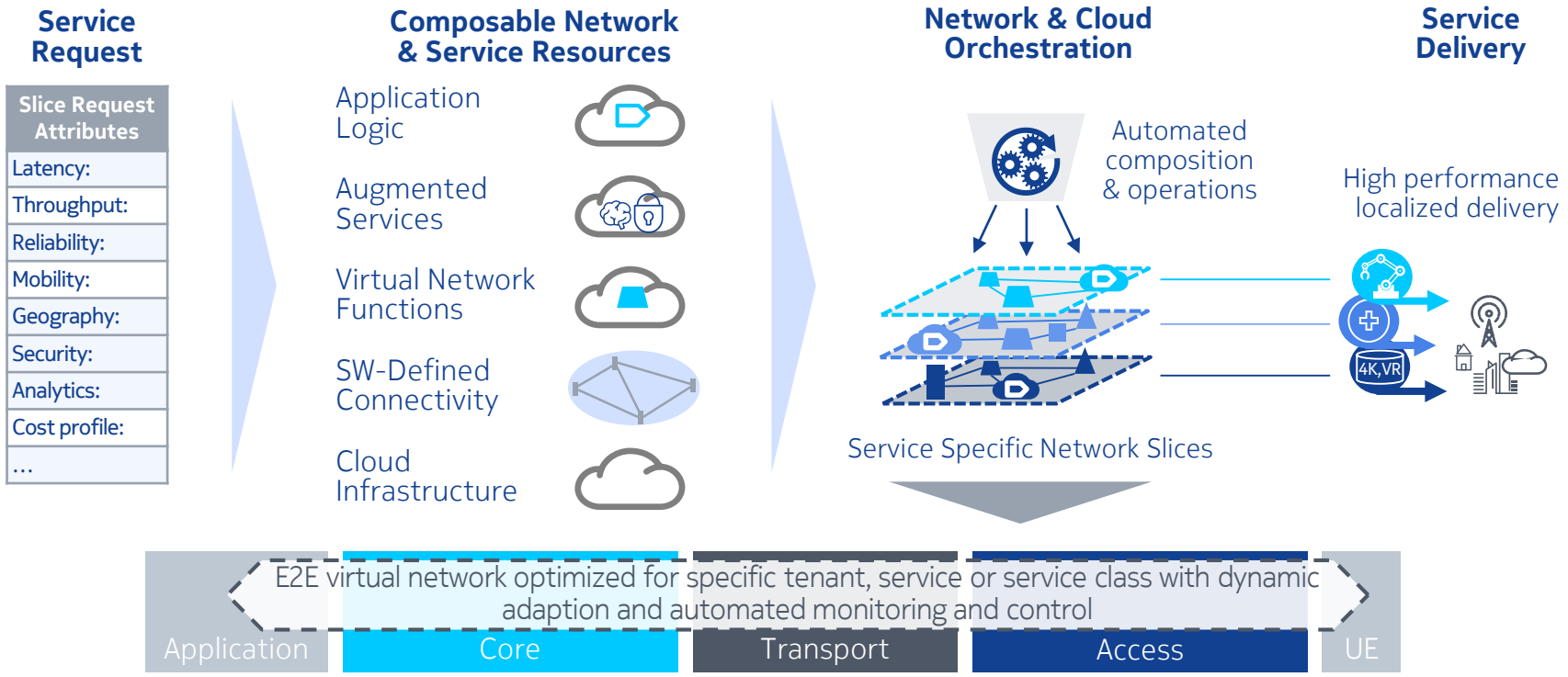
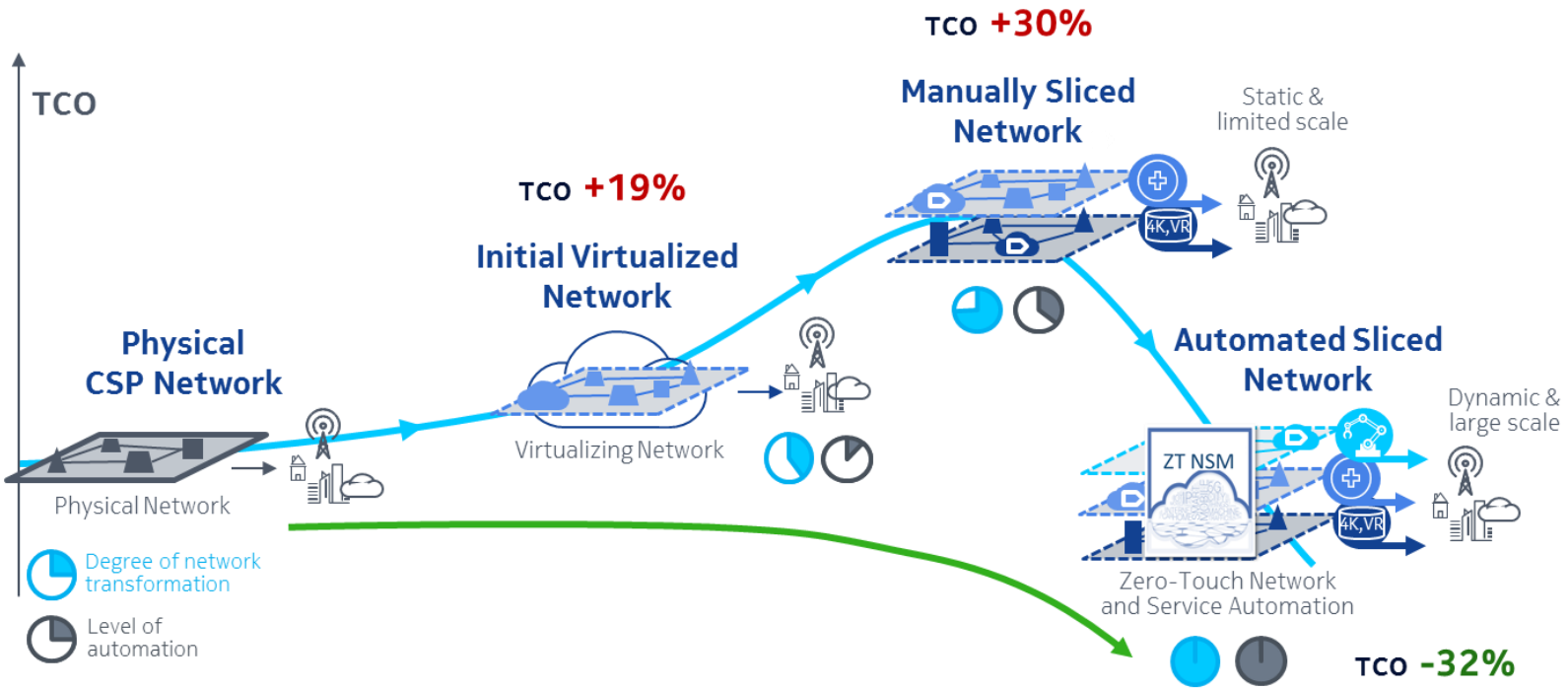
Network Slicing - The foundation for future value creation.



Network slices are end-to-end 'virtual private services'

Network and Service Automation are essential to DSP economics



Without E2E automation NFV/SDN & network slicing add significant cost and complexity

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Open Source and Standard Landscape for Network Automation

Open Source
Implementation and validation

ONAP

Provide uniform, comprehensive platform for orchestration and automation

OPNFV

Provide integrated and compatible NFV reference platform. Integrate with ONAP

Standardization
Specification (architecture and solutions)

3GPP A GLOBAL INITIATIVE

Architecture and solutions for the management of 3GPP based networks and services

ETSI ZSM World Class Standards

Future horizontal and vertical end-to-end architecture for management and automation;

Facilitate collaboration with open-source projects and SDOs

ETSI NFV World Class Standards

Architecture and solutions for the automated management and orchestration of VNFs (Virtualized Network Function) and NSs (Network Services)

ETSI Zero touch network and Service Management

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Work Plan :
10.1. Kick-off (Jan 2018)
13.3. Second Meeting March 2018)
Proof of Concept Framework (April 2018)
Means for Automation (June 2018)
Reference Architecture (September 2018)

Achieve automated end-to-end network and service management, enabling agile service delivery and new business opportunities

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5G Digital Service Provider transformation : Backbone for Digital India

Make your voice heard now:

5G

3GPP A GLOBAL INITIATIVE

ETSI World Class Standards ZSM

ONAP OPEN NETWORK AUTOMATION PLATFORM