



ERICSSON

#ERICSSONLIVE

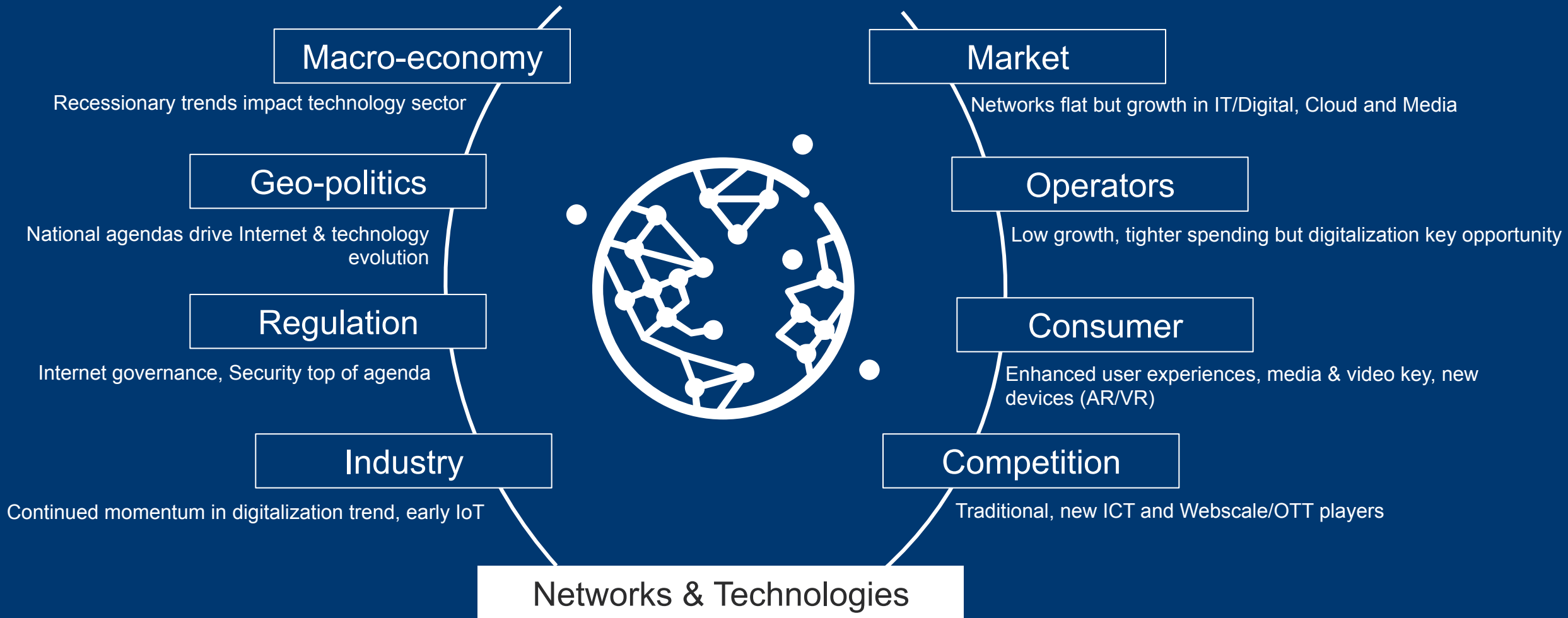
# MARKET, INDUSTRY & TECHNOLOGY EVOLUTION

- PIONEERING AT THE DIGITAL FRONTIER



**Ulf Ewaldsson**  
CTO & Head of Strategy

# SITUATIONAL CONTEXT



# MOBILITY DRIVES OUR NETWORKED SOCIETY – 2022 OUTLOOK



## Ubiquitous Mobility

8.9B subscriptions  
6.8B smartphones  
80% LTE coverage



## Pervasive Data

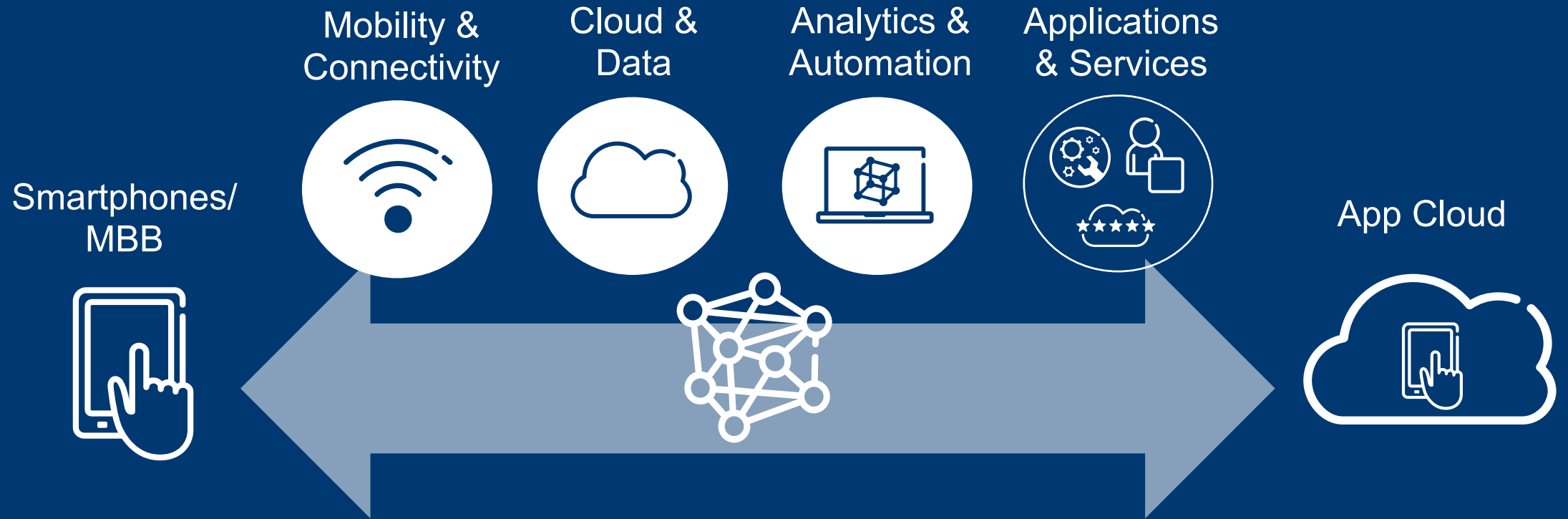
8X Mobile Data Traffic  
~75% Video  
90% MBB subscriptions

## Connected Things

29B Connected Devices  
550M 5G Subscriptions

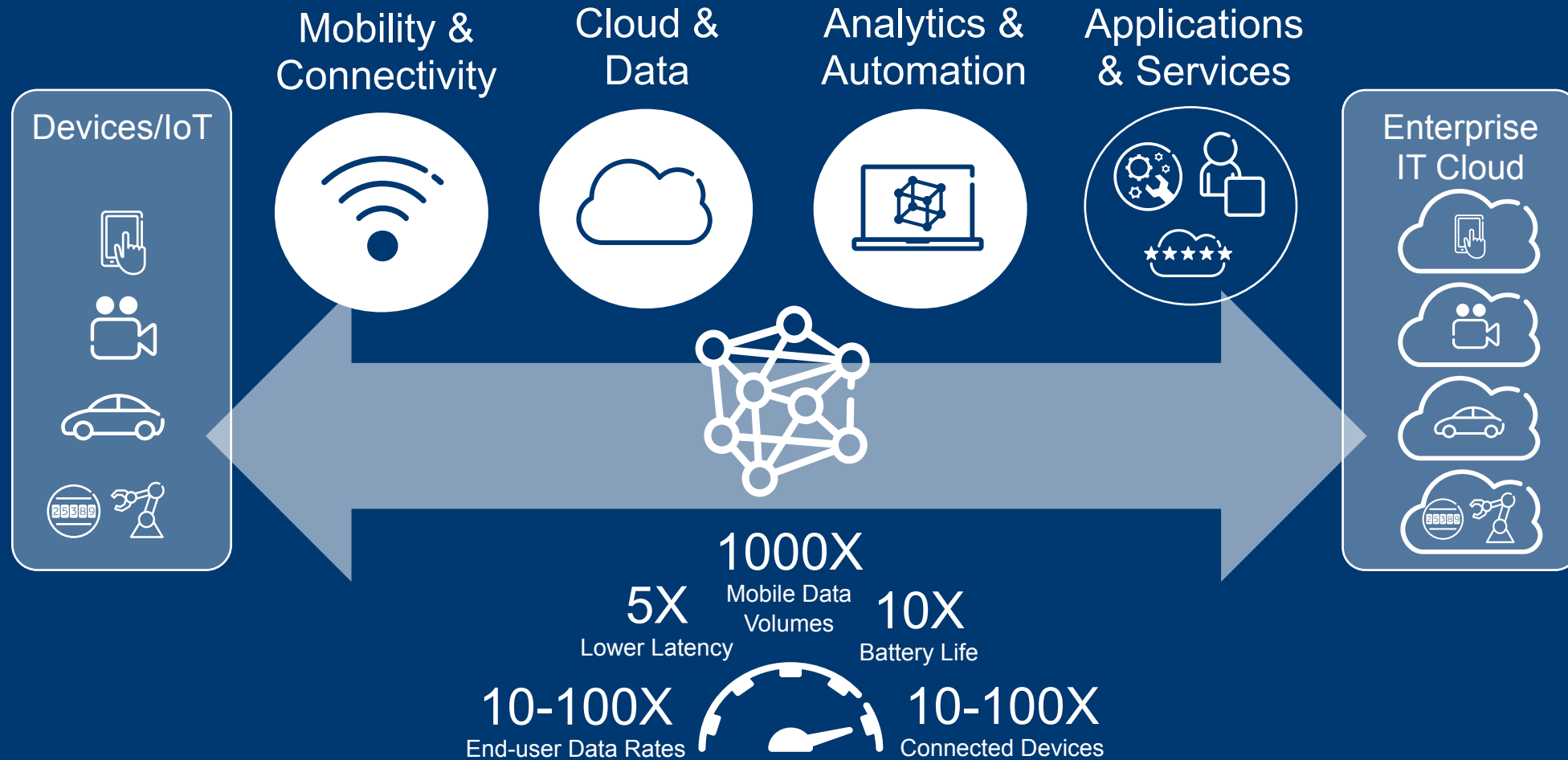
[LINK](#): Ericsson Mobility Report, Nov 2016

# NETWORK EFFICIENCY & PERFORMANCE



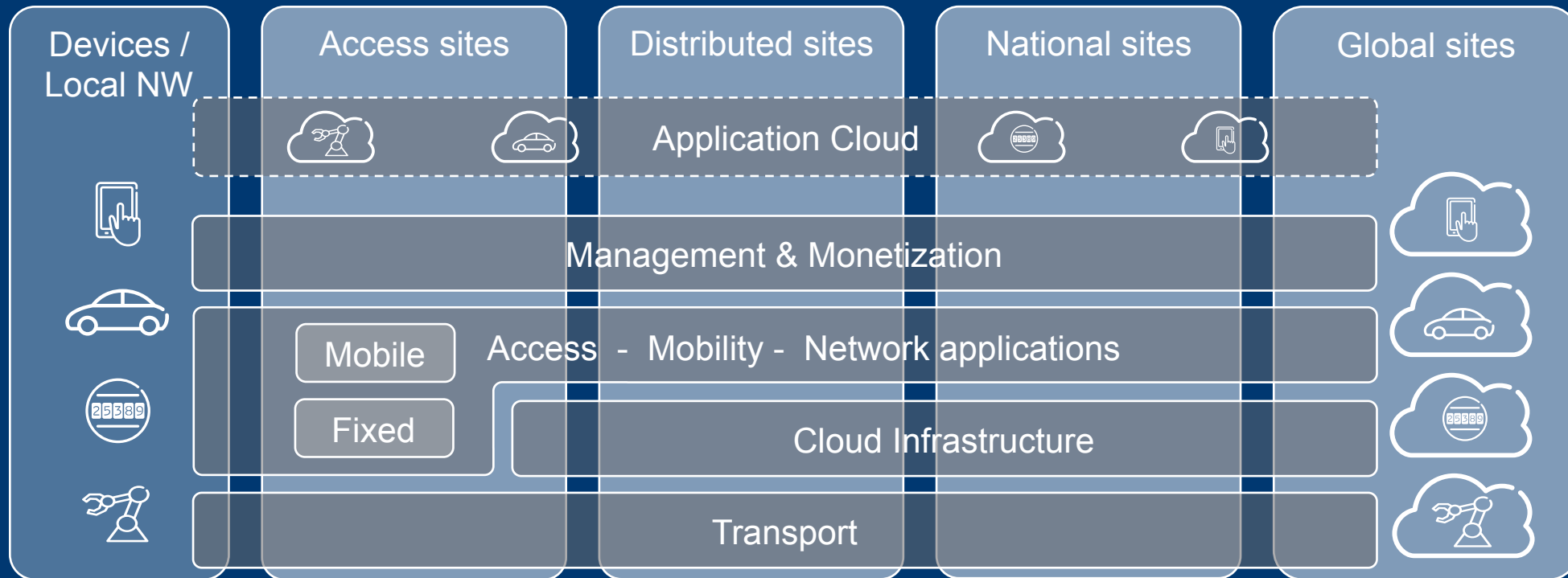
Increased efficiency (lower cost per bit) & higher capability for Mobile Broadband

# INCREASED NETWORK RELEVANCE FOR OTHER INDUSTRIES



A horizontal, programmable Network platform to connect all clouds to all devices

# GLOBAL ARCHITECTURE



Energy Performance

Security

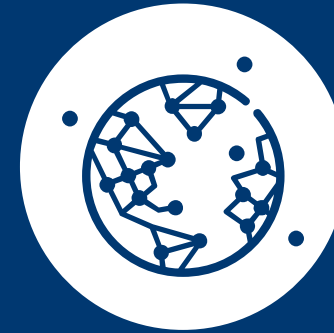


Programmable IP, Cloud Technologies, Full Mobility, Data & Analytics, Automation

# OUR READING ON NETWORKS & OPERATORS



TECHNOLOGY



OPERATOR  
BUSINESS

Applications decoupled from network

Cloud deployed applications

Increased automation with software

Multi purpose transport and access

Network essentials - trust, security and availability

Operators will focus on Network as an open platform

Experimentation with services above the Network

Operators see digital transformation as new  
Enterprise opportunity

Operators capitalizing on their local presence and  
looking to partner for global presence

Technology developments influencing operator business transformation



# 5G USE CASES



BROADBAND AND MEDIA  
EVERYWHERE



SENSORS EVERYWHERE



SMART VEHICLES,  
TRANSPORT



INFRASTRUCTURE, MONITOR  
AND CONTROL



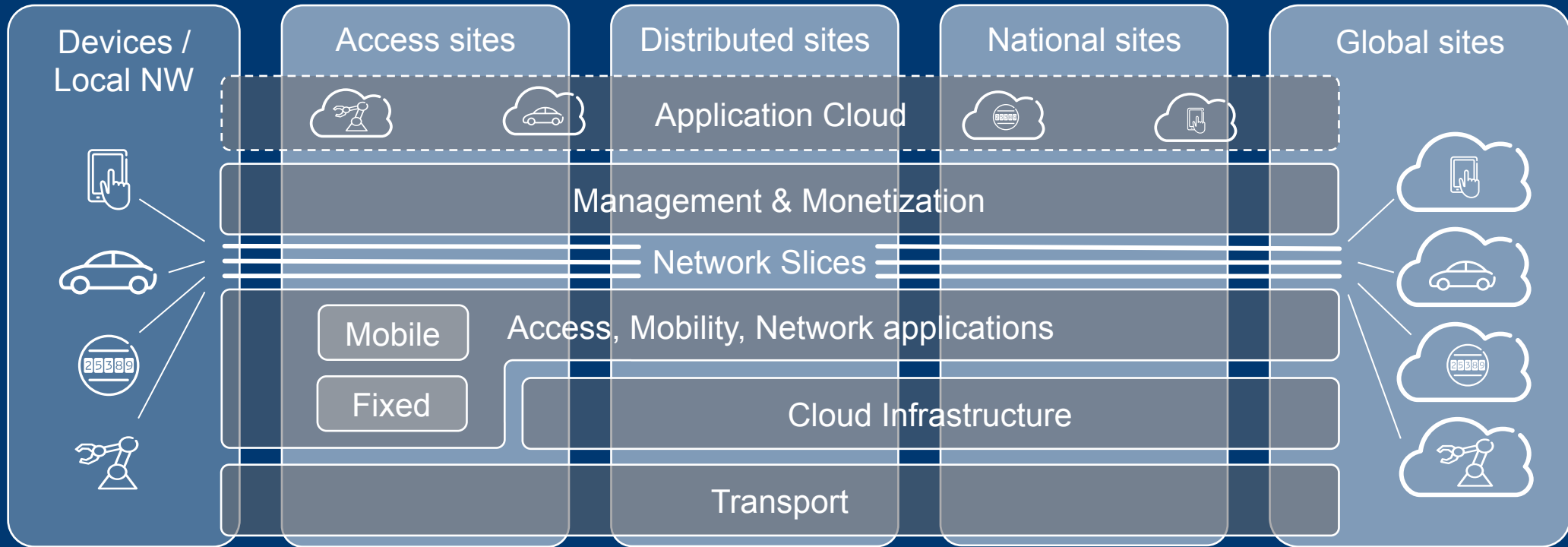
CRITICAL CONTROL  
OF REMOTE DEVICES



INTERACTION  
HUMAN-IOT

Broadband & Media leading, more use cases leveraging enhanced capabilities

# ONE NETWORK FOR MULTIPLE INDUSTRIES



5X Lower Latency  
 1000X Mobile Data Volumes  
 10X Battery Life

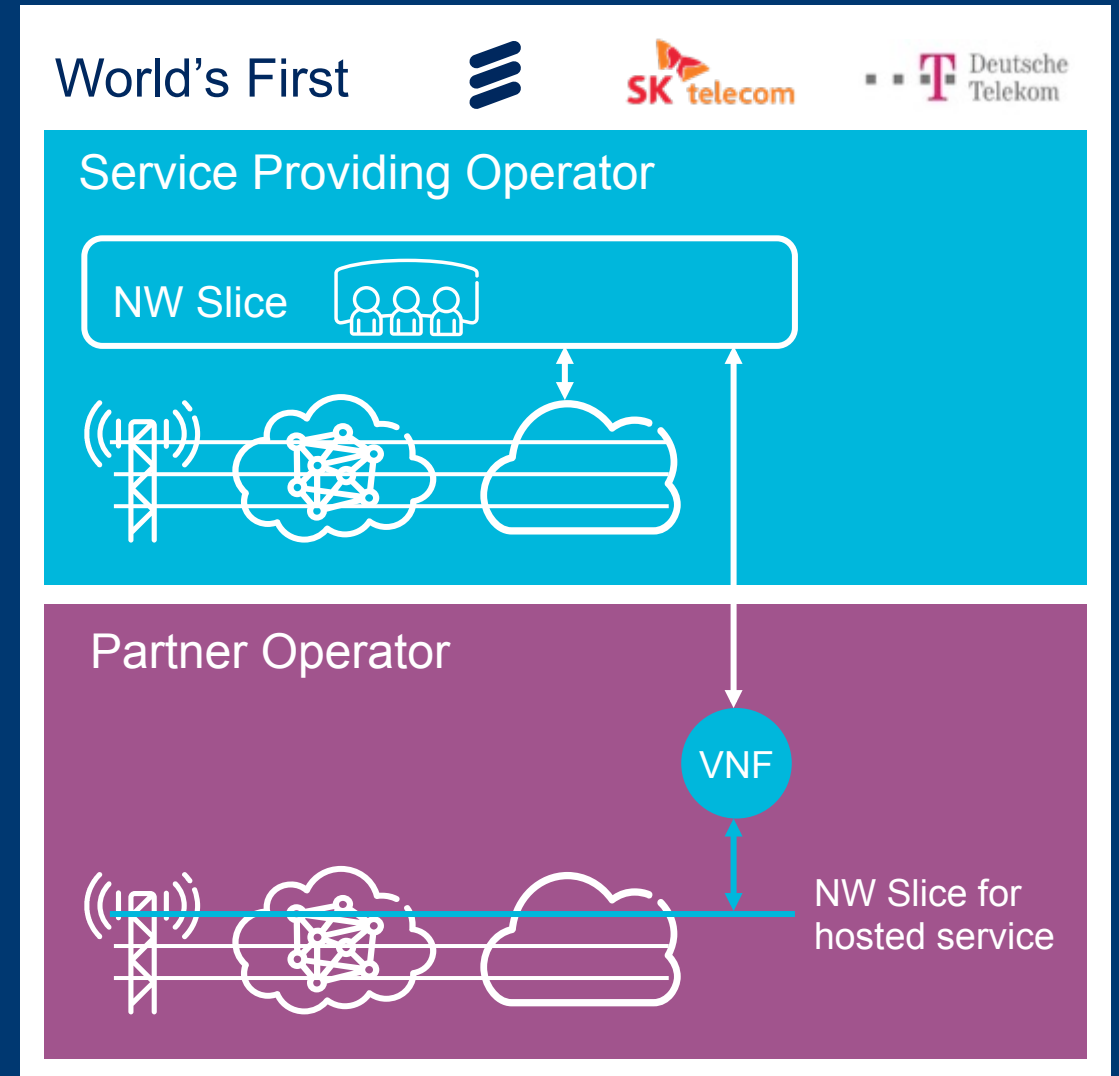


10-100X End-user Data Rates  
 10-100X Connected Devices

# FIRST 5G FEDERATED NETWORK SLICING



- › Global service for Industry segments—one global deal
- › Manage Service Experience and Service Control
- › Service provider establishes NW slice in
  - Home and Remote network
- › Remote NW slice through Federated agreement:
  - Deploy VNF's
  - Connect VNF's to partner NW
  - Connect other resources
  - Management & control

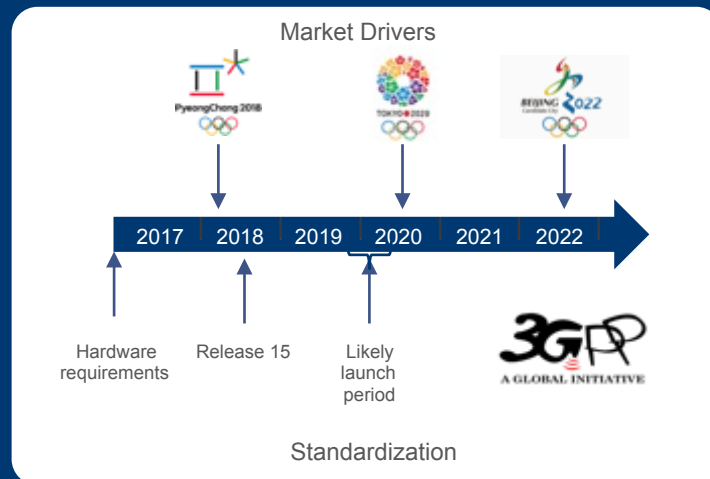


# 5G AROUND THE GLOBE



## › Overall progress

- Strong unity on overall 5G view
- Strong focus on time
  - › Launch NR work item 1H17
  - › Pre-commercial launches 2018
  - › Launch 2019–20
- Broad acceptance of one standard
- Mobile Broadband and IoT focus



## › North America

- Verizon: Fixed Wireless Access focus
  - › Fiber alternative
  - › Early commercial launch
- AT&T
  - › 3GPP time plan
  - › Strong on consumer and IoT

## › Europe

- New revenue streams
- Standard with high flexibility, wide range of applications

## › North East Asia

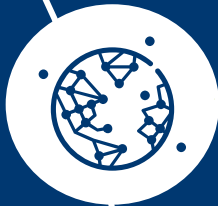
- Technology focus
- External trigger points (Olympics)
- China & Japan: global standard

# DRIVING A COMPREHENSIVE 5G AGENDA



## Doors open for new industry verticals

- 5G for industries



## Open Source momentum broadens within the industry

- Industry/Customer initiatives
- Ericsson engagements



## Establishing the framework for 5G

- Standardization
- Spectrum



## Key driver in the intelligent transport systems space

- Infrastructure, vehicle electronics, operators, car manufacturer, chip manufacturer, road regulators etc.

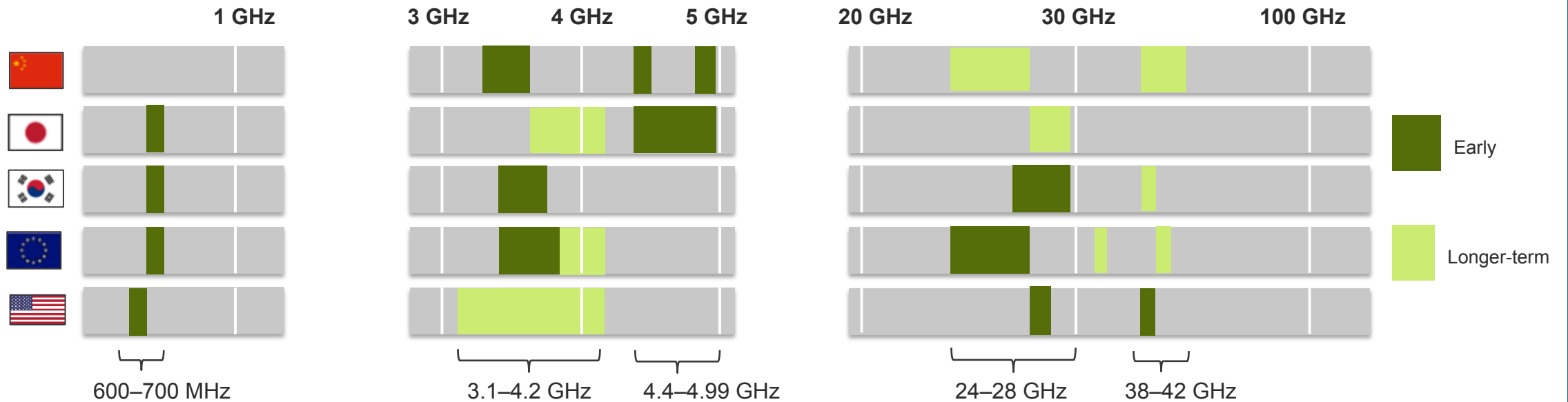


## Industry Engagements

- Leading industry transformation through partnerships

# 5G SPECTRUM POSSIBILITIES

## PENDING DECISIONS



Future allocations possible with Global synergies in both low & high bands



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SIGNED 5G OPERATOR AGREEMENTS

# INDUSTRY PILOTS & ENGAGEMENT



## Automotive

Develop end-to-end solutions for future mobility and transportation services, impact regulation and standardization



## Mining

Evaluate mobile communication for underground mining, incl. safety and increased productivity



## Manufacturing

Evaluate 5G and IoT opportunities to improved the production efficiency, enabled by data analytics, cloud and industrial IoT and more



## Transport

Explore use of 5G for intelligent transport and investigate as-a-service offerings and reduce fleet operations costs



# FIRST MULTI-VEHICULAR 5G TRIALS



- › BMW, SKT & Ericsson
- › 5G trial system
  - Multiple sites
  - Full mobility between sites between beams
  - 28 GHz
- › Sustained Gigabit/s speed (~4Gbps) at 170km/h

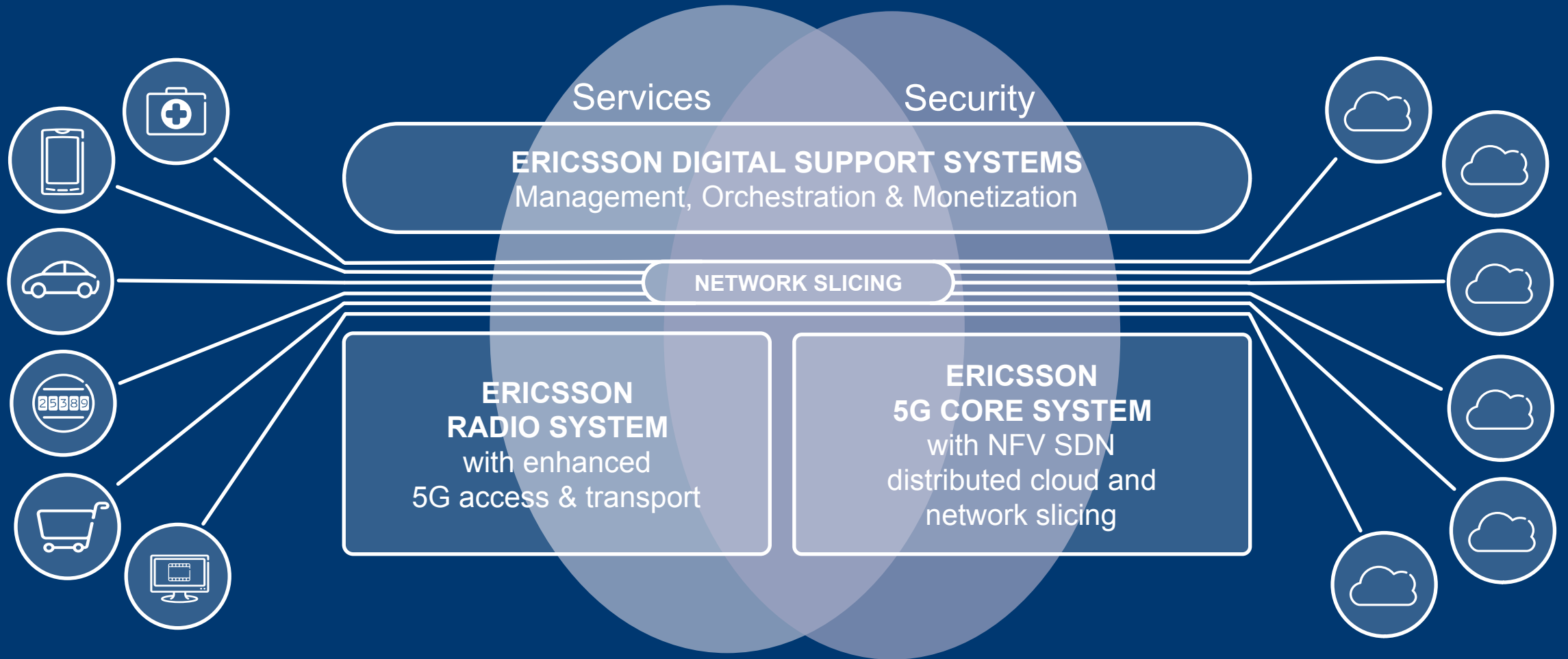
## BMW DRIVING CENTER IN SEOUL



BMW cars with  
5G connectivity

# E2E 5G SYSTEM @MWC2017

BASED ON OUR LEADING PORTFOLIO





# ERICSSON RADIO SYSTEM REACHES NEW HEIGHTS

Market's first global 5G Access and Transport portfolio

## 5G Radio



AIR 6468



5G NR Mid-band



5G NR High-band

## 5G Transport



Fronthaul on Rail



10 Gbps MINI-LINK




Indoor MINI-LINK Unit



Bandwidth Notification



Router on Rail



Compact Router

## RAN Evolution




5G PLUG-INS

- Massive MIMO
- Multi-user MIMO
- Latency Reduction
- Intelligent Connectivity
- RAN Virtualization



CAT-M1



NB-IoT


## Gigabit LTE



Baseband




4T / 4R Radios



Gigabit LTE

- 4x4 MIMO
- 256 QAM
- Carrier Aggregation
- Lean Carrier
- License Assisted Access



Dual-band Radio Dot




4T / 4R Dual-band



4T / 4R Low-band

## LTE Foundation




Vault Radio



Low Energy Scheduler




App Coverage Booster



Shared Carrier



Tower Company Portfolio

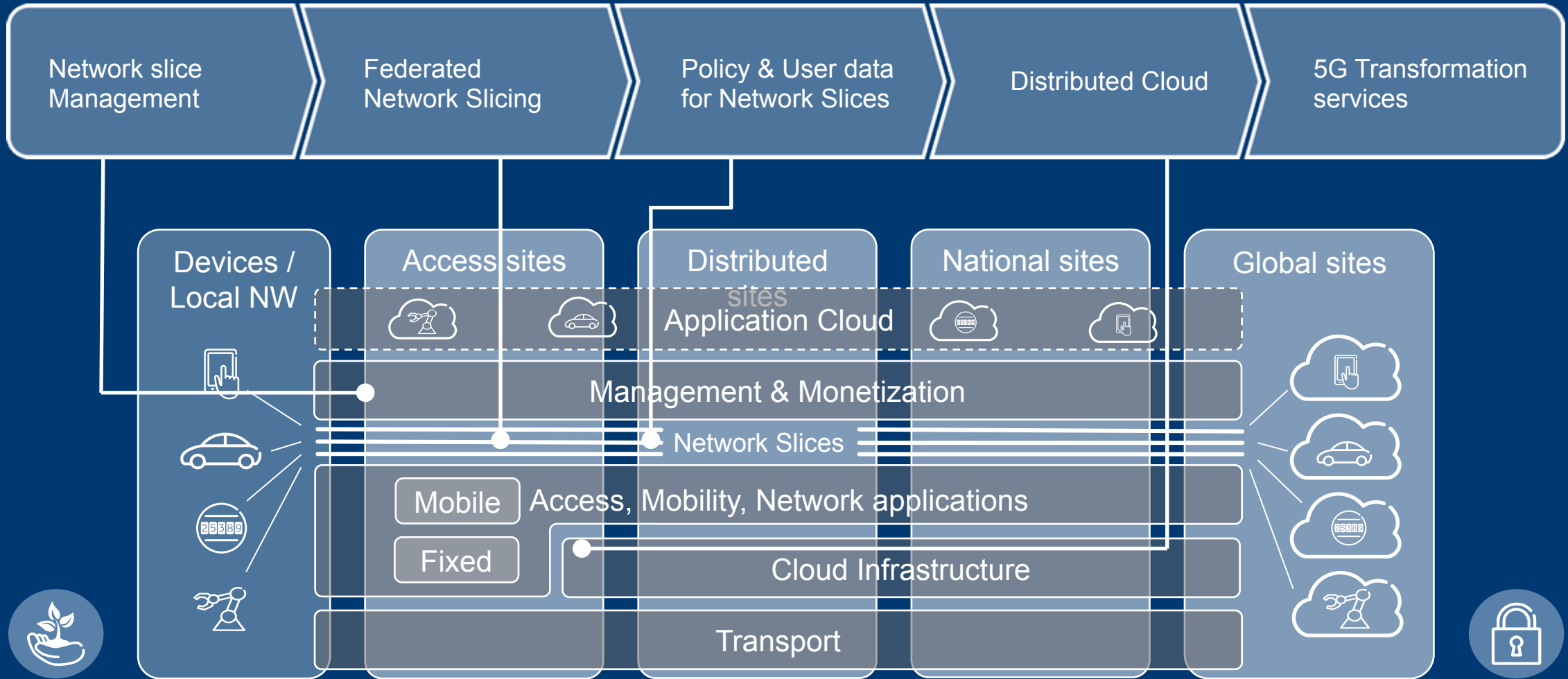


Battery on Rail

Launched earlier  
Launched today

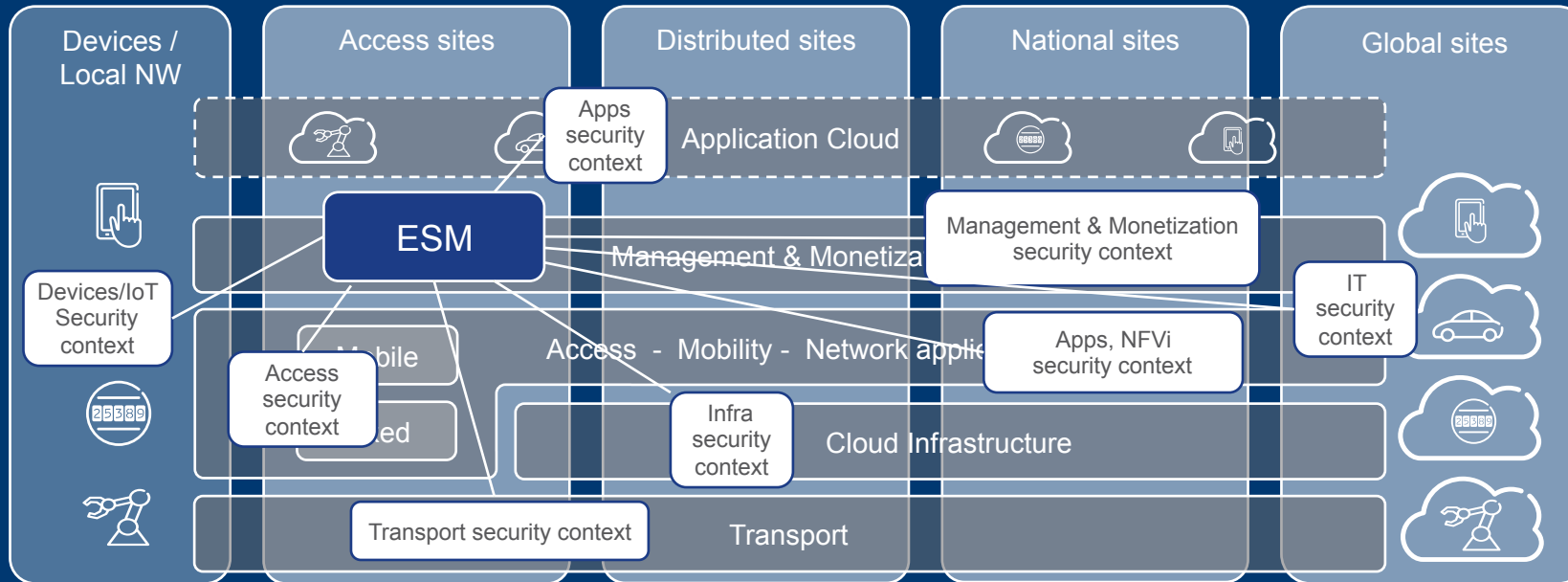
# 5G CORE SYSTEM

## LAUNCHING 5 NEW CAPABILITIES



# ERICSSON SECURITY MANAGER (ESM)

CONTEXTUAL & AUTOMATED - NETWORKS, CLOUD, ENTERPRISE -5G AND IOT





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