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Ultra broadband networks

Creating value through Mobile Networks

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Mobile Networks at a glance

€64bn[2]

2016 primary addressable market

Revenue mix:

55% products

45% services

~52 000

professionals

~23 000

in R&D

~25 000

in Services

#1 LTE[1]

#3 RAN[1]

#1 IMS/ VoLTE[*, 2]

#2 Small Cells[1]
(pico and micro)

#3 Services[2]

1) Source: Dell'Oro *2) Source: Nokia estimate* **) LTE Subscriber numbers worldwide*

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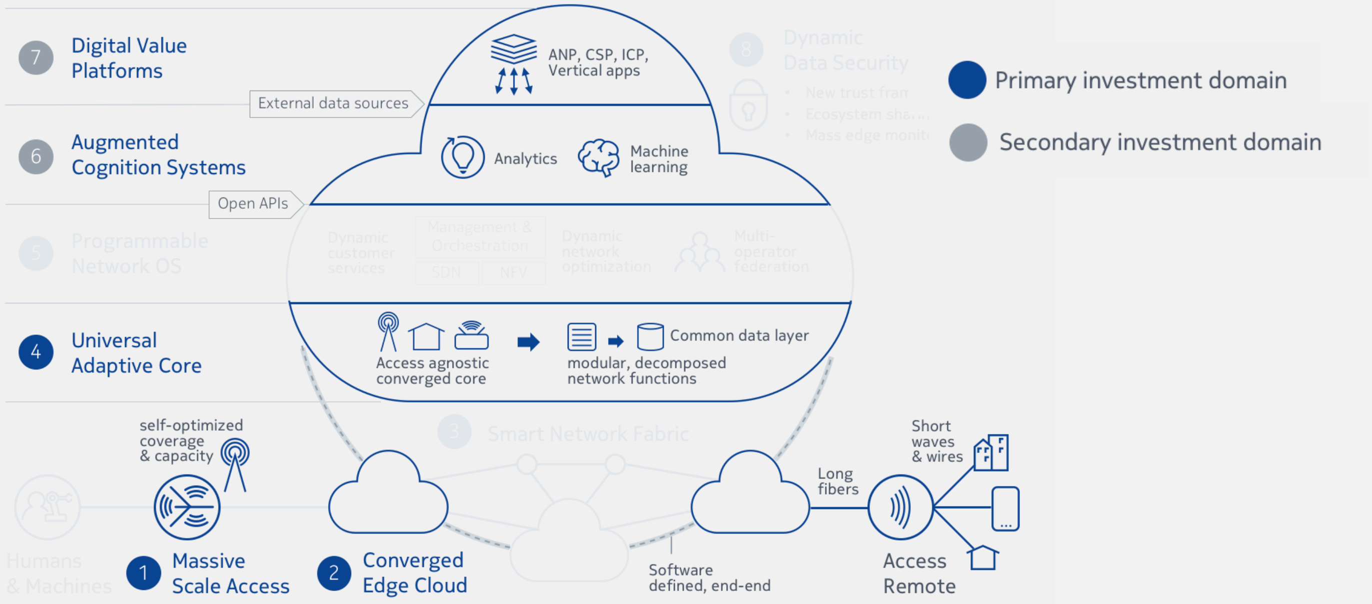

Radio

- 4G / 4.5G / 4.9G / 5G
- Cloud RAN
- High performance
- Self-optimizing
- TCO optimization

Converged Core

- Telco Cloud infrastructure
- Cloud Service Core
- Agile network service capable

Advanced Mobile Networks Solutions

- Capacity & coverage with small cells
- Enterprise solutions
- Connnected IoT

Services

- Attached services
- Professional services
- Cloud and transformation services

Traditional models are being disrupted, while new opportunities emerge

Key trends shaping the industry

- Explosive growth of data and connected things
- Disruption of traditional carrier model
- Accelerating transition to the Cloud
- New spectrum enabling innovative business models

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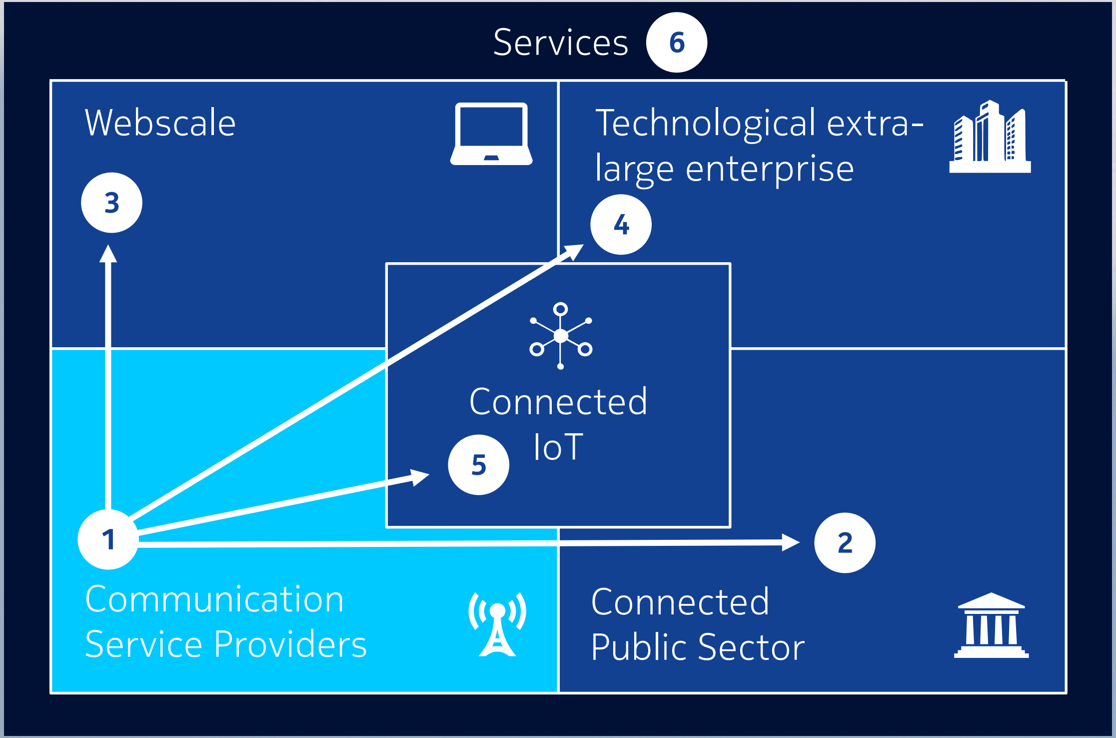
Positioned to differentiate and lead in the evolving landscape



1. **Lead** with CSPs in LTE, 5G and Cloud
2. **Disrupt** public sector with LTE
3. **Lead** with Webscale and alternative service providers
4. **Expand** into technological extra-large enterprise
5. **Lead** in connectivity for IoT
6. **Differentiate** strategically with Services

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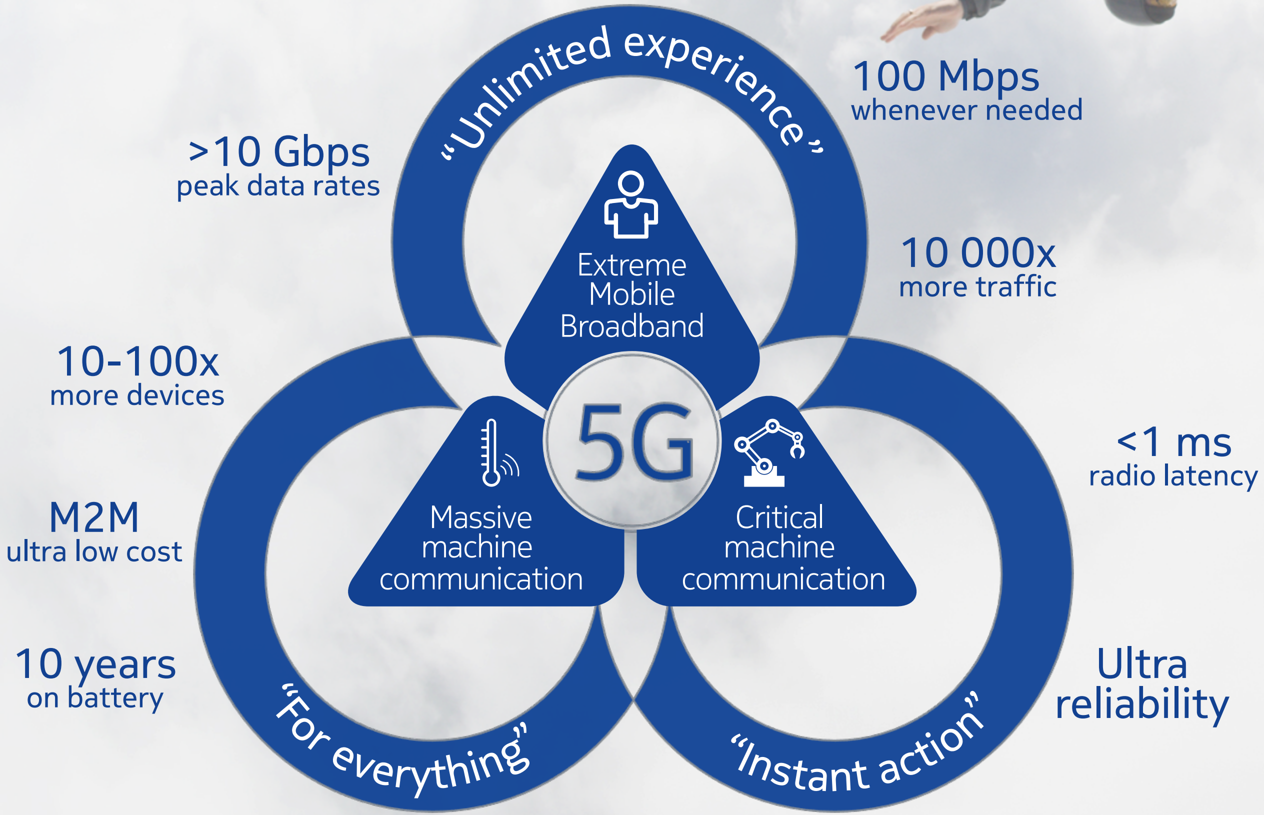
5G will create new possibilities



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Lead on the journey from 4G to 5G

4.5G

600Mbps speed

>10ms latency

4.5G Pro

1Gbps speed

~10ms latency

4.9G

>1Gbps speed

<10ms latency

5G

>10Gbps speed

1ms latency

Capacity

User experience

New revenues

Architecture evolution

Total cost of ownership

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Lead the evolution of Cloud programmable core

Virtualization

Distributed datacenters

E2E solutions

Stateless machines, Shared data layer

Radically simplified networks

Agility and endless scalability

Cloud native core network, Network slicing

Cloud-optimized core

OTT-like service delivery

Digital service delivery, Self-optimizing networks

New digital business models for operators

Solution-led

Cloud infrastructure

Broad Virtual Network Functions

Open APIs

Integration and Transformation Services

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Expand to grow revenues in attractive adjacencies

Public sector

- Public safety
- Air-to-ground
- Mission-critical railway solutions

Webscale

- End-to-end network solutions
- Turnkey design and build
- New business models

Technological extra-large enterprise

- Private LTE
- Disrupt with unlicensed LTE
- Tailored solutions

Connectivity for IoT

- Networks ready for IoT
- Cloud-enabled
- Focused verticals

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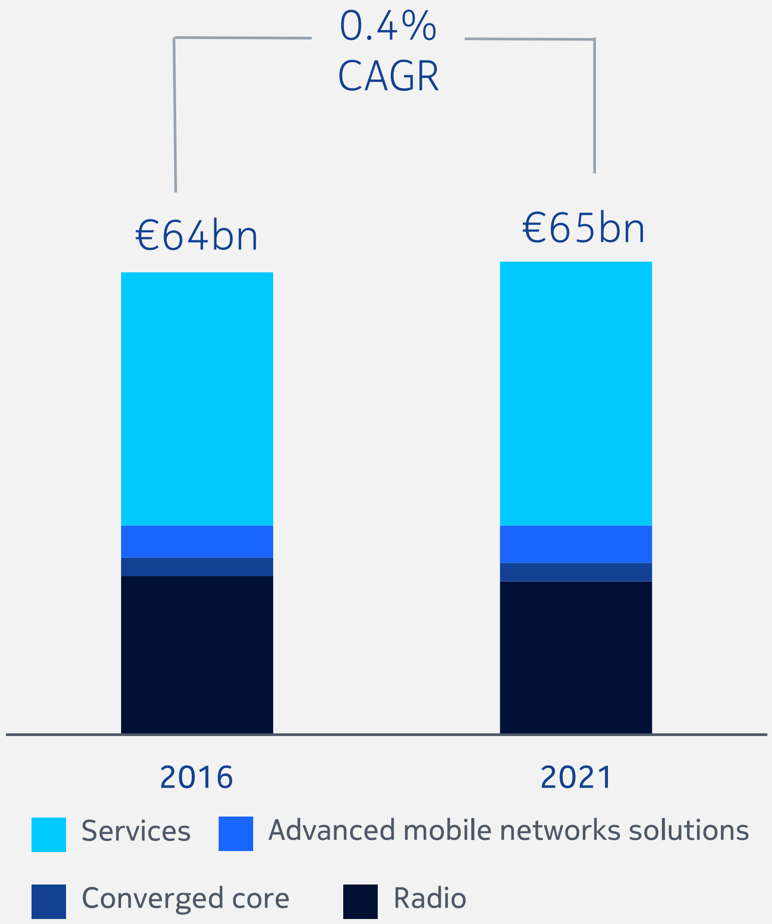
Primary market outlook

Radio

Converged Core

Advanced Mobile Networks Solutions

Services



Source: Nokia estimate

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Market outlook for Attractive adjacencies

Public Sector

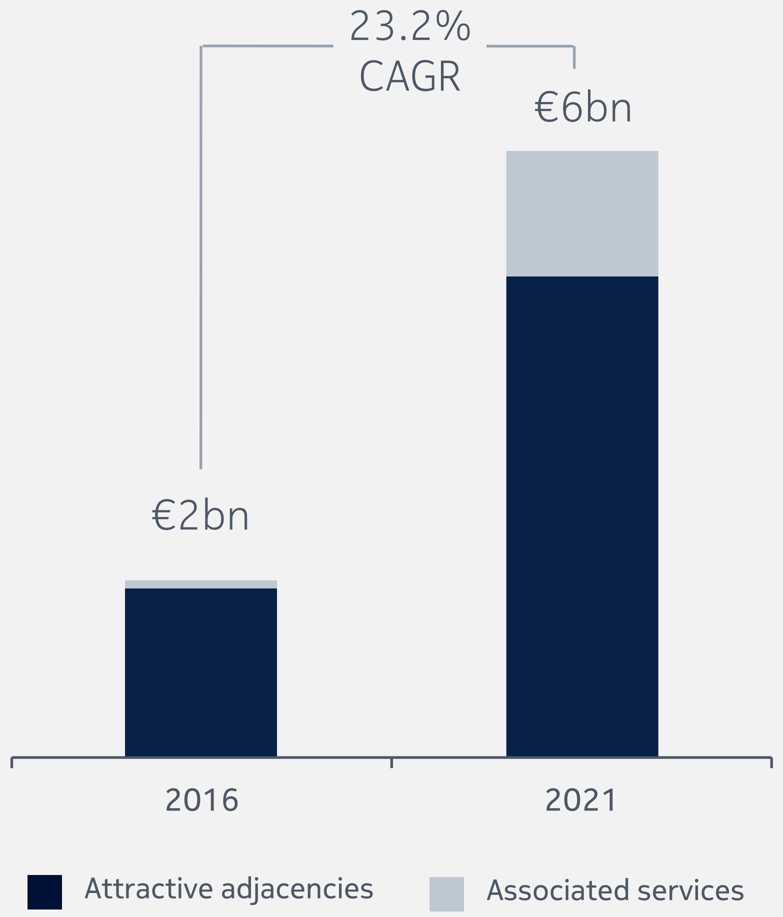
Webscale

Technological extra-large enterprise

Connectivity for IoT

Associated services

Source: Nokia estimate



Higher returns through focused growth

Required investments already factored into long-term Networks guidance

Disciplined expansion and diversification

Primary market

€64bn in 2016

5 year CAGR **0.4%**

Attractive adjacencies

€2bn in 2016

5 year CAGR **23.2%**

Strong long-term business model

Net sales:

Grow faster than the primary market

Long-term operating margin:

Expand to double digits

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Nokia will achieve the EUR 1.2 billion cost savings target

Industry-leading governance and operating model drive execution excellence

Streamlining of overlapping products and services

Continuous transformation

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Continuous transformation

‘Smarter’

Focus on:

OPEX

Cost of sales

Commercial management

Enablement

Transformation Programs	Impact
1. Regional and Service Profitability Improvement (RSPI)	Gross Margin
2. Product cost optimization	
3. Site materials cost reduction	
4. Best-in-class serviceability	
5. Care process modernization	
6. Software upgrade process modernization	Gross Margin & OPEX
7. Transformation best-practice applied across merged business	
8. R&D Transformation	OPEX
9. Continuous improvement capability development	Enabler & Gross Margin
10. End-to-end process management	Enabler

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Looking forward

2016

- All portfolio convergence decisions made in 1H2016 and portfolio roadmap aligned with customers
- World leader in VoLTE subscribers
- 4.5G Pro commercialized
- Leadership in small cells

2017

- 4.9G launched
- Evolving to Cloud native core and radio
- Establish CSP datacenters
- Disrupt public safety market with LTE
- Differentiate strategically with Services

2018

- First 5G sales
- Lead in technological extra-large enterprise and private LTE
- Lead in unlicensed radio
- Achievement of cost savings target

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