

**NOKIA** Bell Labs

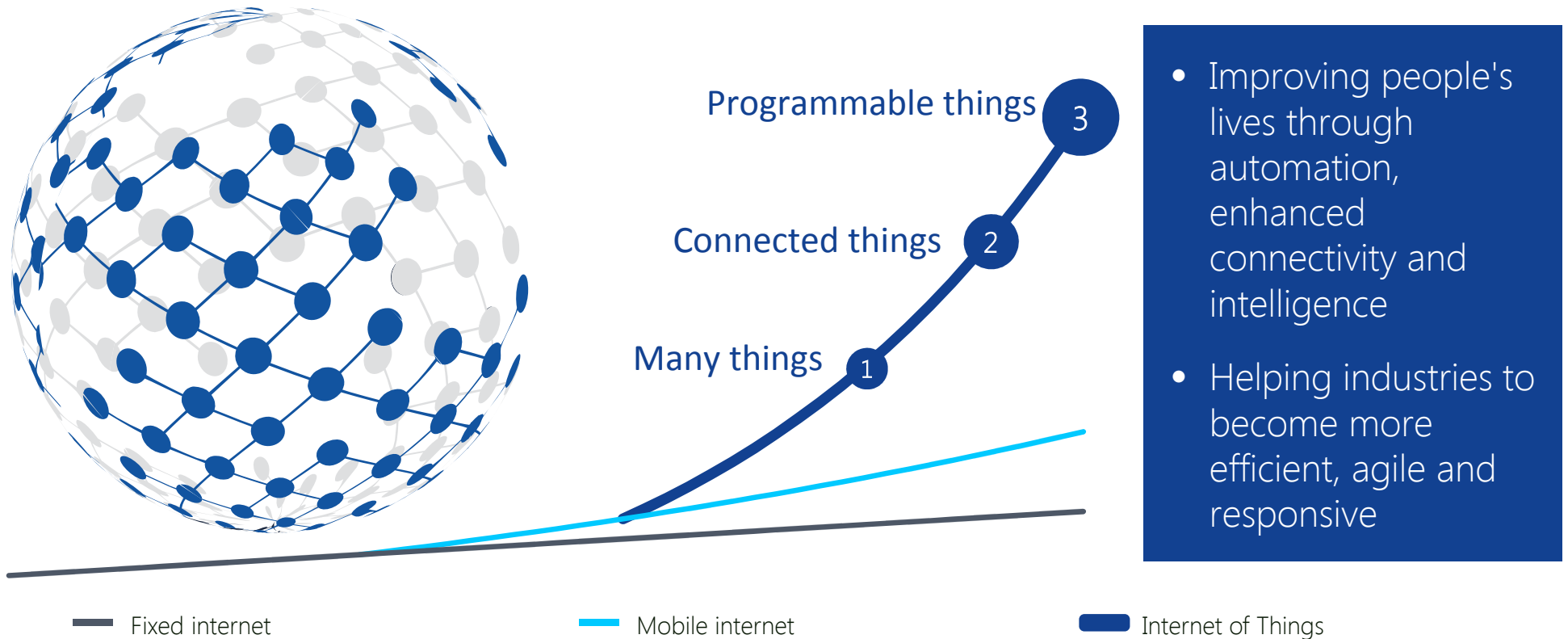
# 5G for the Programmable World

Create time by expanding the human possibilities of technology

Lauri Oksanen

# Nokia vision – a programmable world

Benefits of ICT for all sectors and across the globe



- Improving people's lives through automation, enhanced connectivity and intelligence
- Helping industries to become more efficient, agile and responsive

# The programmable world provides an opportunity to improve people's lives

Of fatalities in car accidents are due to human error and slow reaction<sup>1</sup>

90%

Water lost each year in the US because of aging and leaky pipes, broken mains and faulty meters<sup>2</sup>

2.1T gallons

Fatalities each year worldwide by not following doctor's prescriptions<sup>3</sup>

1 mio

Mobile glucose monitoring tools can cut diabetes management costs by<sup>4</sup>

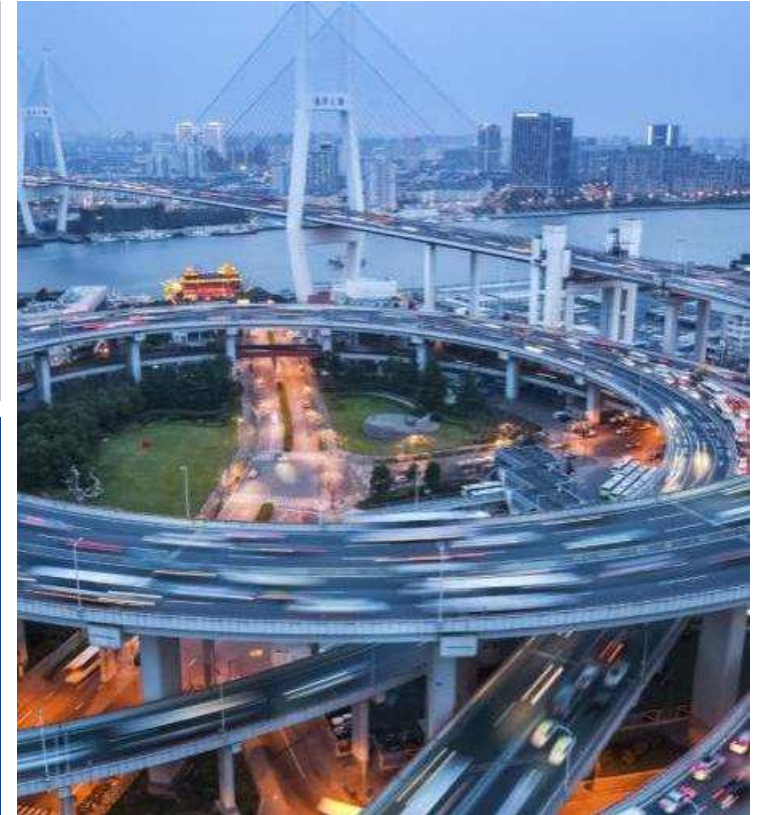
50%

Estimated energy waste in US buildings due to inefficient and outdated HVAC systems<sup>5</sup>

50%

Possible yearly economic impact of IoT applications in cities in 2025<sup>6</sup>

\$1.6 trio



<sup>1</sup> International Organisation for Road Accident Prevention; <sup>2</sup> NPR; <sup>3</sup> Huffington Post; <sup>4</sup> fiercehealthcare; <sup>5</sup> American Physical Society ; <sup>6</sup> McKinsey

# Automation of everything – the next technological revolution



100x  
augmented  
cognition  
SLA

trust  
Infinite capacity  
global-local  
alliance

imperceptible  
latency  
security

terascale

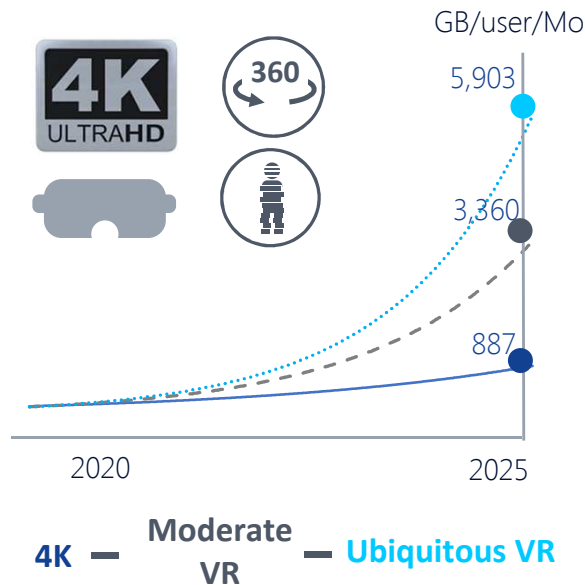
Pervasive digital-physical systems drive life and business automation

Automation of everything transforms economy and society and creates time

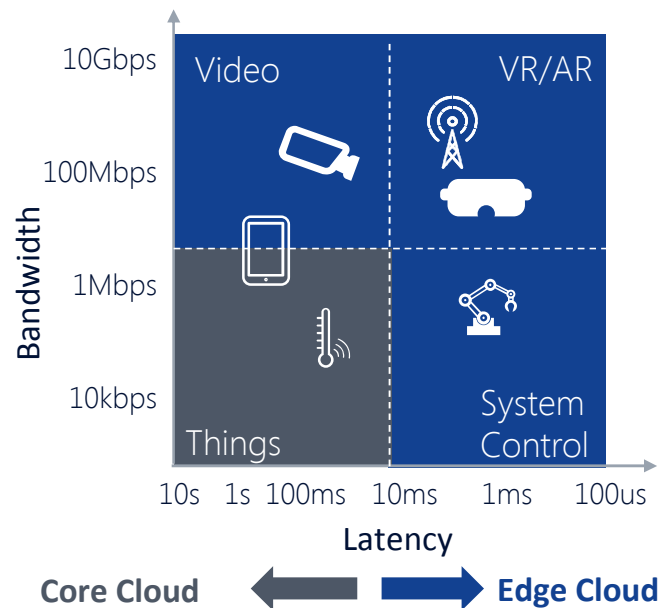
Fundamental digital needs demand radically new network architecture

# New applications redefine network requirements in the 5G era

## Seemingly infinite capacity



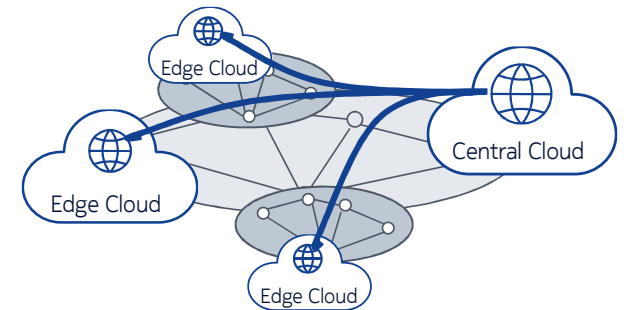
## Imperceptible latency



## Global-local alliance

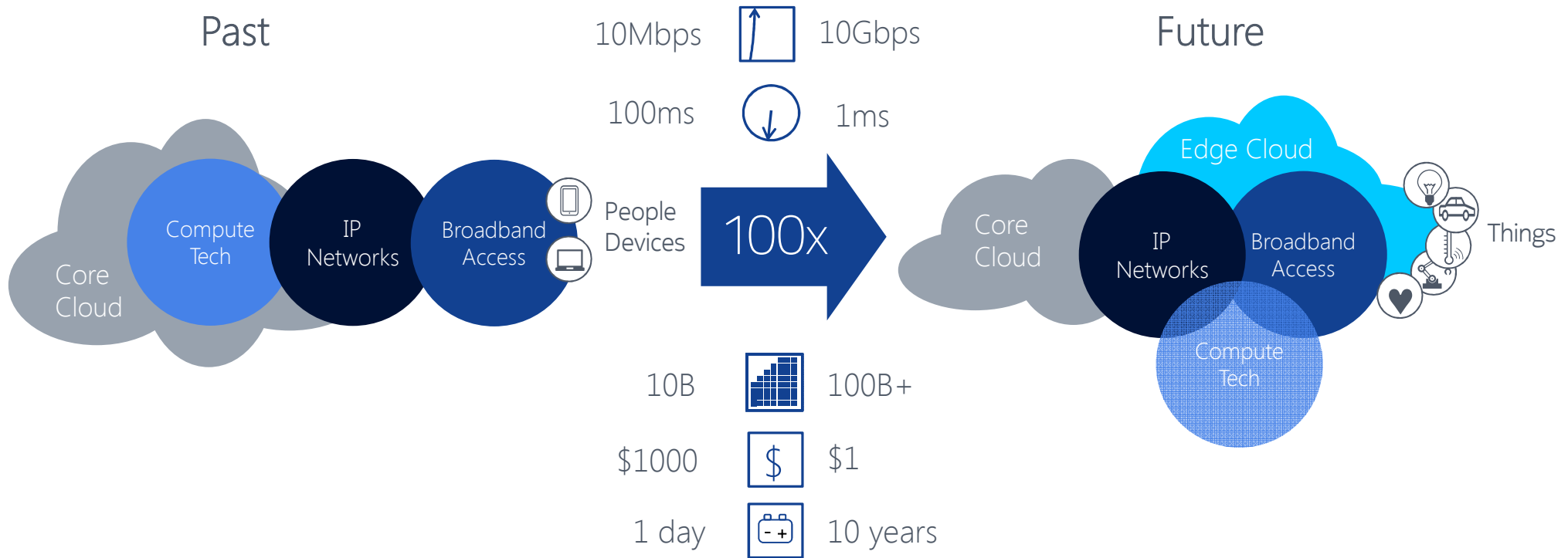
### Local delivery with global reach

- New global-local value chains
- Disruptive business models
- Local service performance, efficiency and customization



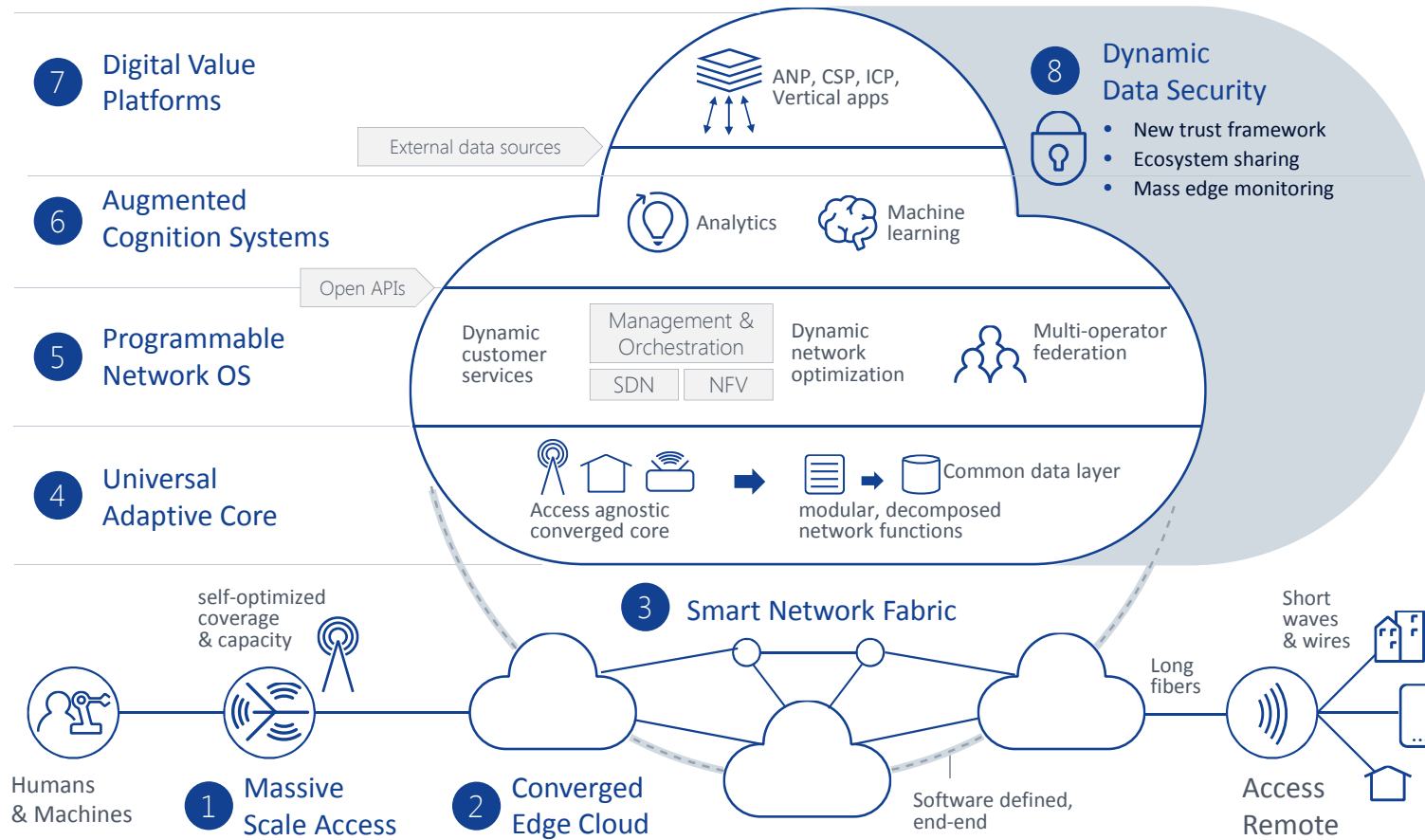
~100x more capacity in < 10 years and ms latency for networks & services leveraging global-local business

# The Future X Network for 5G: The 100yr, 100x shift



Radically new distributed Future X network architecture

# The Future X Network, 5G is more than just new radio



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