

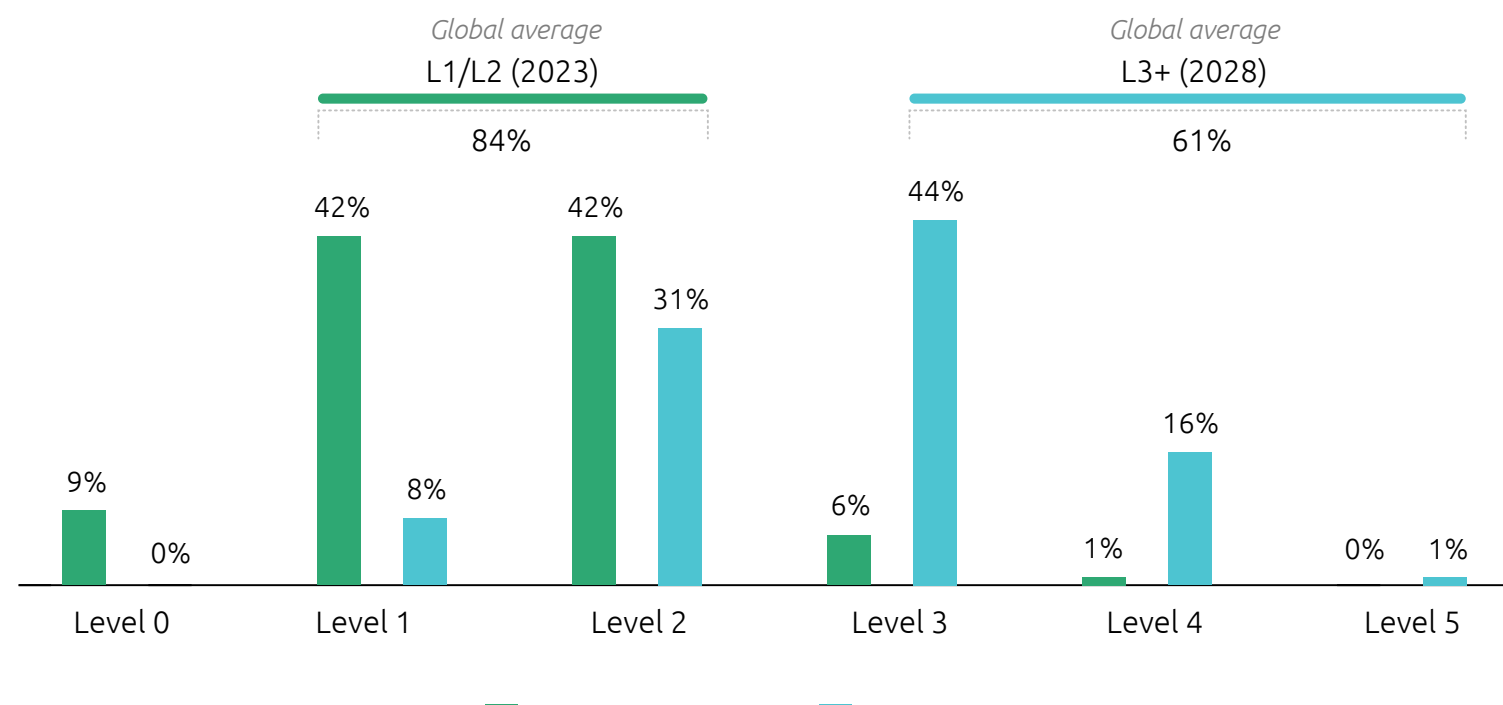
# Networks with intelligence

Why and how the telecom sector should accelerate its autonomous networks journey

## The telecom sector is just starting its autonomous networks journey

Six in 10 telcos aim to have Level-3 or above autonomy by 2028

### STATE OF OVERALL NETWORK AUTONOMY, CURRENT VS. EXPECTED



Percentages represent share of organizations by overall level of network autonomy (according to TM Forum's levels of autonomous networks). Source: Capgemini Research Institute, Autonomous Telco Networks Survey, December 2023–January 2024, N = 113 large CSPs.

#### BY COUNTRY

Nearly two-thirds of telcos in Sweden, Spain, Italy, and France have attained Level 2 autonomy

One-third of telcos in the US have moved to either Level 2 or Level 3 autonomy

#### BY DOMAIN

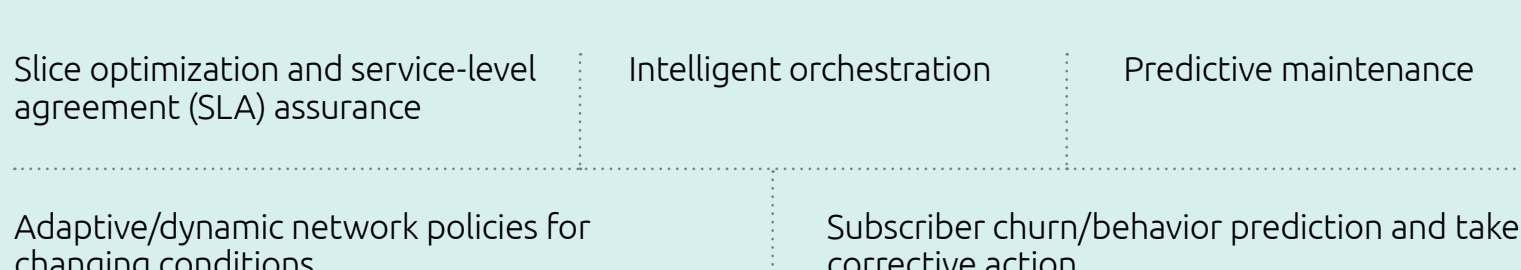
About 90% of telcos have all network domains at Levels 0-2

#### BY REGION

European telcos lead progress in autonomous networks journeys

Most of the autonomous networks use cases are in the initial stages of deployment

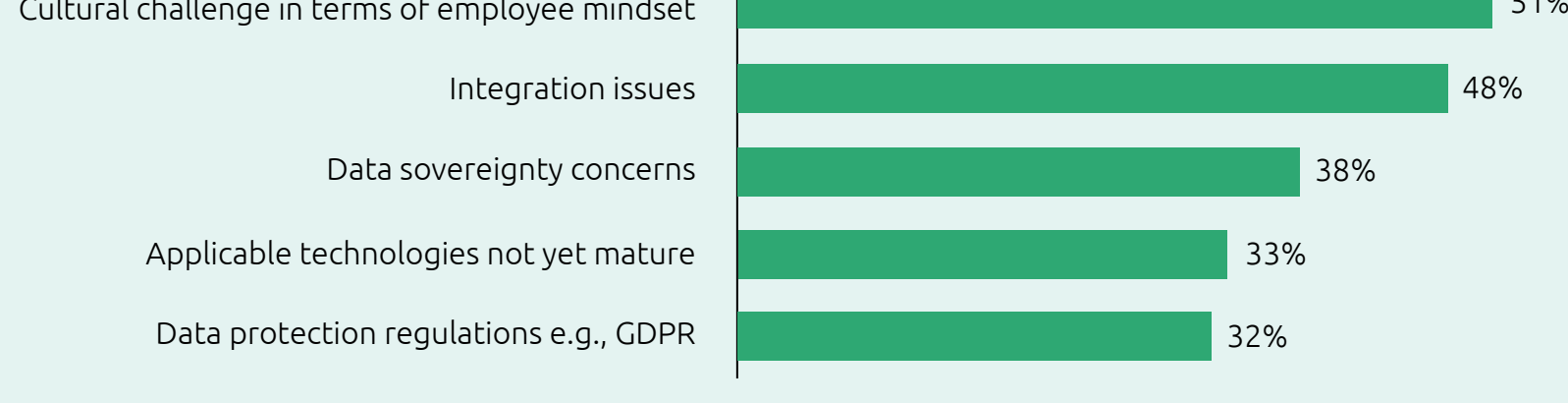
### Top use cases under experimentation (POC/pilots) per our survey



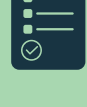
## What is holding back the industry's progress on autonomy?

Telcos encounter several obstacles to their transition towards higher network autonomy

### TOP BARRIERS TO ADOPTION OF HIGHER LEVELS OF NETWORK AUTONOMY



Percentages represent the share of organizations. Source: Capgemini Research Institute, Autonomous Telco Networks Survey, December 2023–January 2024, N = 113 large CSPs.



#### STRATEGY

About 1 in 5 telcos have a comprehensive autonomous networks transformation strategy



#### LEADERSHIP

Nearly 1 in 5 telcos have appointed a dedicated leader for autonomous networks



#### ROADMAP

Half of telcos have a roadmap for the next 1-2 years

### THE POTENTIAL OF GENERATIVE AI FOR AUTONOMOUS NETWORKS

57%

of telcos are exploring the potential of generative AI for autonomous networks

13%

of telcos have implemented generative AI for networks at a partial scale



More than half of telcos are currently using or planning to use generative AI in several use cases

## Telcos that are moving faster on autonomy are reaping clear benefits

Autonomous networks offer clear, significant benefits

20%

improvement in operational efficiency

18%

network operational expenditure savings

>50%

of telcos have witnessed a marked improvement in fault detection, network scalability, and flexibility, along with a notable decrease in network downtime and outages

The benefits of autonomous networks are expected to outweigh investment

\$87 million

Expected investment over the next 5 years

Expected OpEx savings from autonomous networks over the coming five-year period

-\$150 million-\$300 million per organization

Estimated return on investment (RO1)

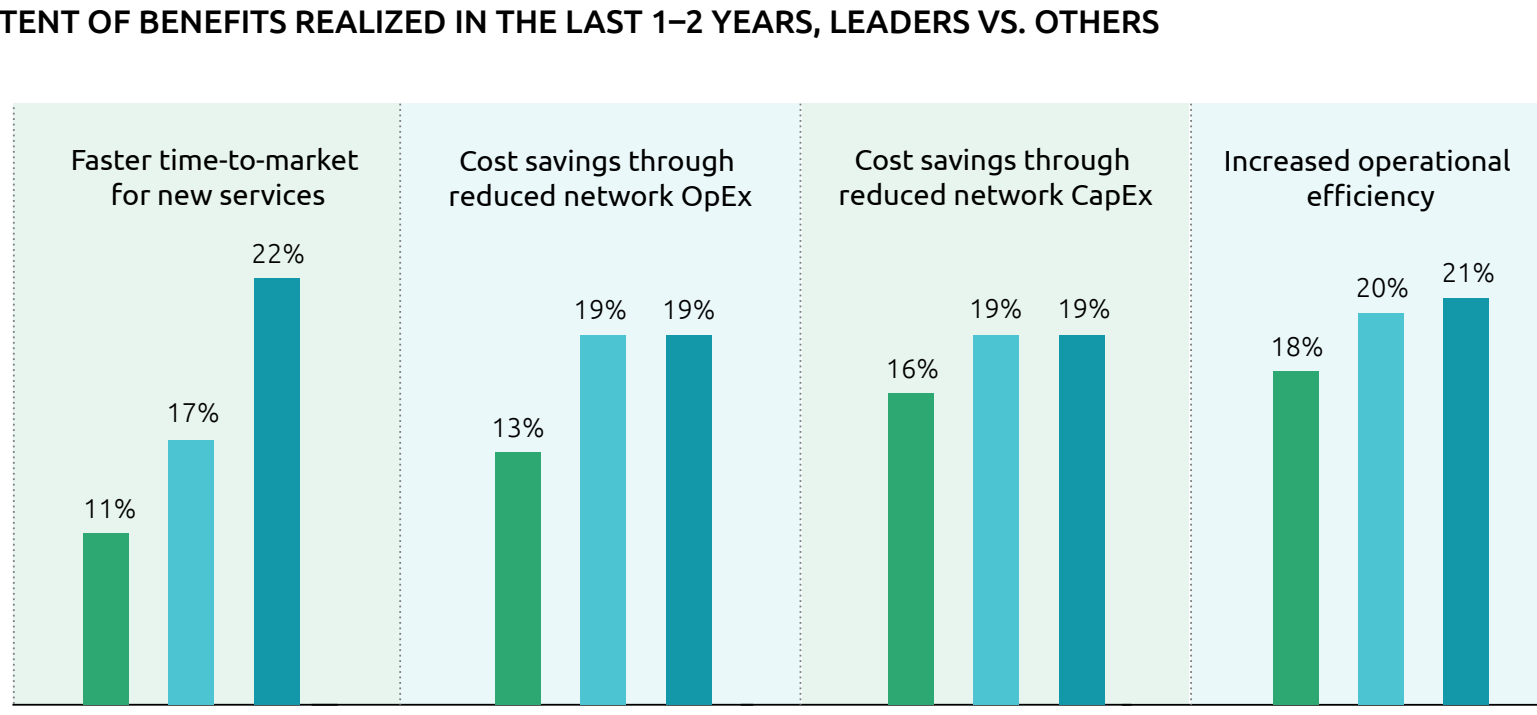
1.7x-3.4x

Estimated payback period

2.9 to 1.5 years

Leading telcos are significantly outperforming their peers

### EXTENT OF BENEFITS REALIZED IN THE LAST 1-2 YEARS, LEADERS VS. OTHERS



Source: Capgemini Research Institute, Autonomous Telco Networks Survey, December 2023–January 2024, N = 113 large CSPs, N = 19 Leaders, N = 74 Fast-followers, and N = 20 Beginners. Capgemini Research Institute analysis. We classified surveyed organizations into leaders, fast-followers, and beginners, based on: the maturity of autonomous networks transformation strategy and roadmap, current level of network maturity, investments, and stage of implementation of various autonomous networks use cases.

### THE SUSTAINABILITY BENEFITS OF AUTONOMOUS NETWORKS

71%

of telcos have significantly reduced energy consumption in the last 2 years

2.6-5.2%

Expected reduction in telcos' overall emissions enabled by autonomous networks

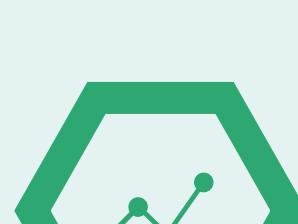
## How can telcos accelerate and sustain their autonomous networks journeys?

#### People Transformation

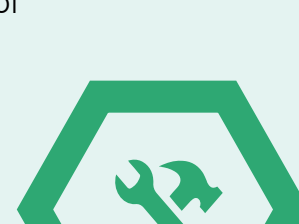
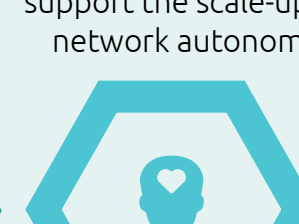
Formulating the right talent strategy to support the scale-up of network autonomy

#### Pace

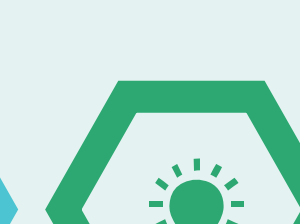
Calibrating the pace of your transformation in line with networks' maturity



**Strategy**  
Devising a strategy and roadmap for the autonomous networks journey



**Tech and data/AI**  
Investing in key technology and data/AI initiatives



**Innovation**  
Innovating continuously to be in tune with the latest developments

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