Capgemini RESEARCH INSTITUTE

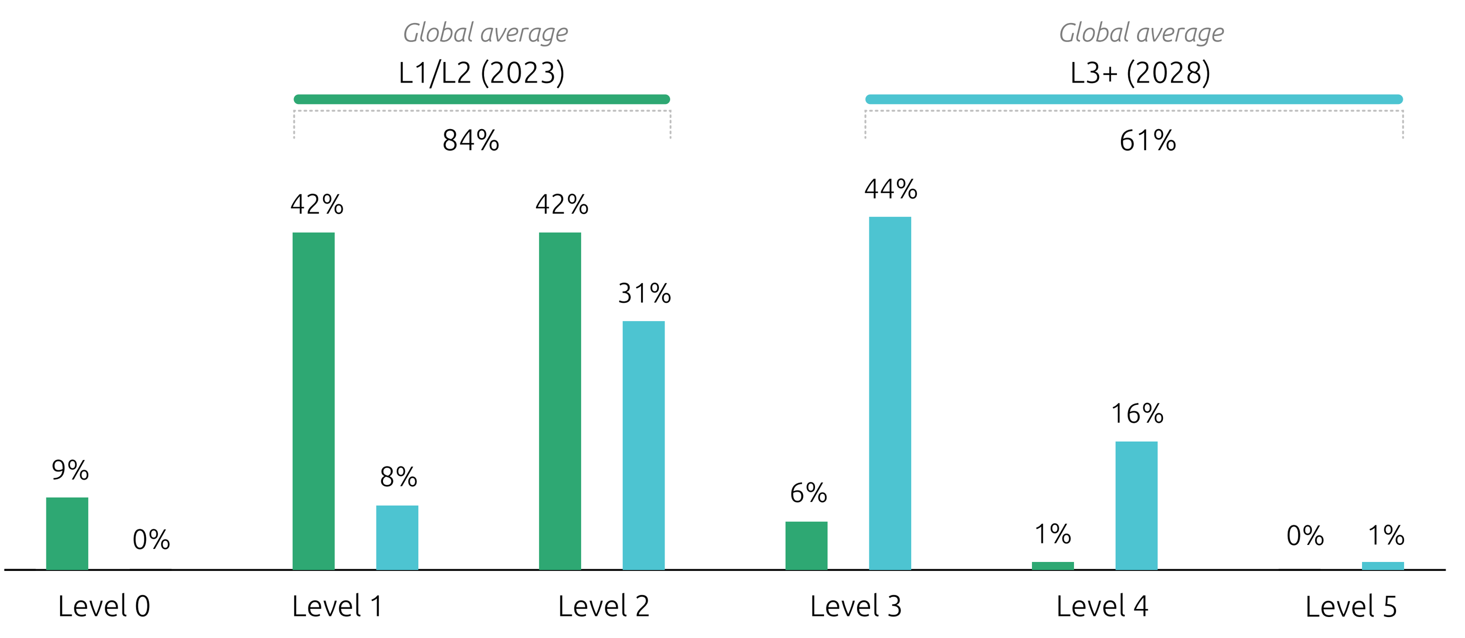
Networks with *intelligence*

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

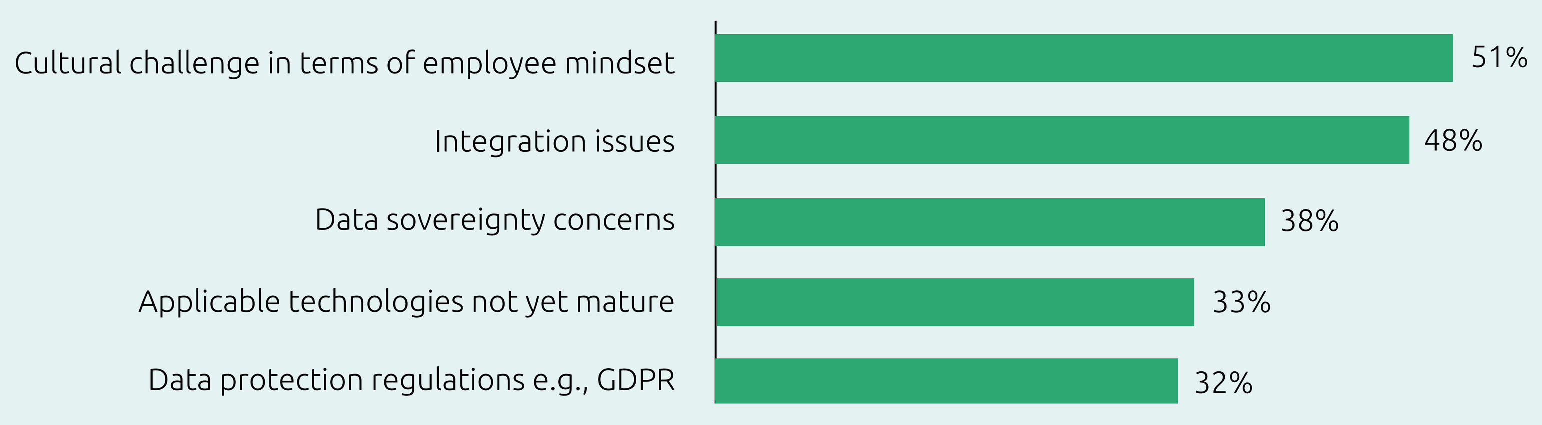
Top use cases under experimentation (POC/pilots) per our survey

- Slice optimization and service-level agreement (SLA) assurance
- Intelligent orchestration
- Predictive maintenance
- Adaptive/dynamic network policies for changing conditions
- Subscriber churn/behavior prediction and take corrective action

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

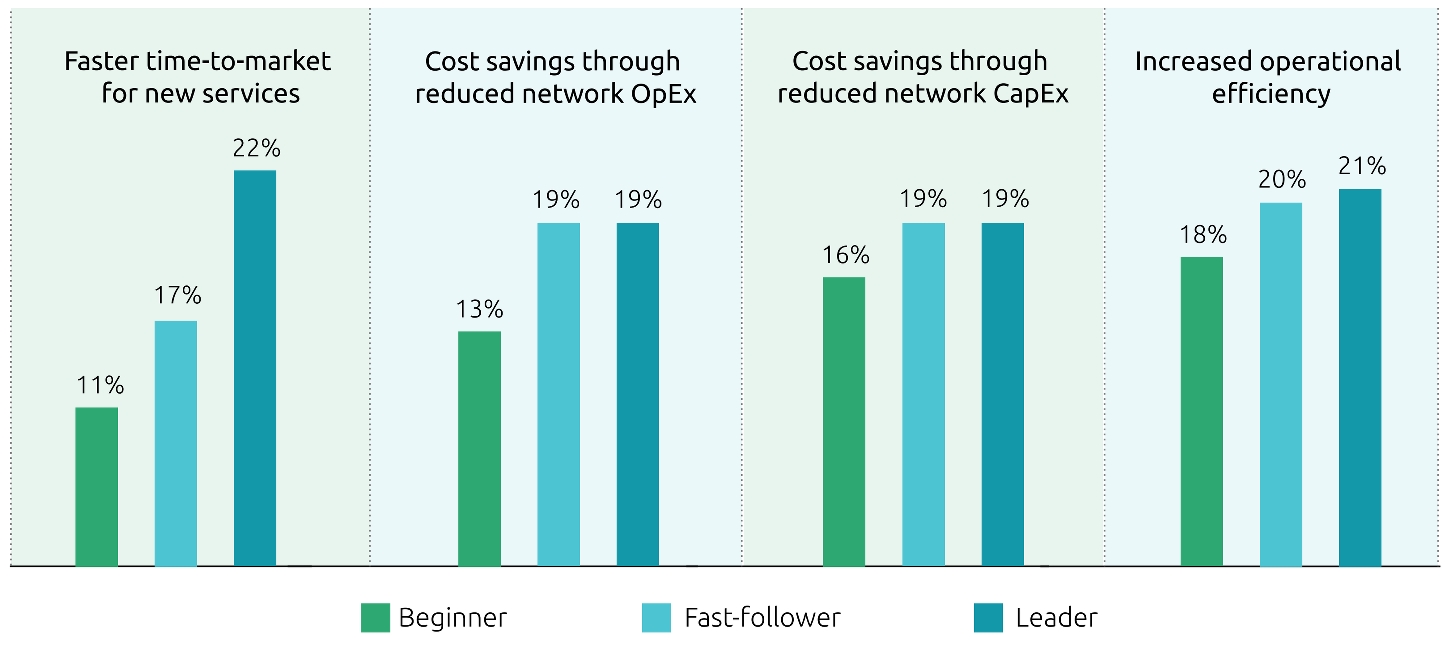
The benefits of autonomous networks are expected to outweigh investment

$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?

Strategy
Devising a strategy and roadmap for the autonomous networks journey

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

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

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

Innovation
Innovating continuously to be in tune with the latest developments

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