Why is now the time to rethink edge orchestration?

Wednesday 2nd February
1pm GMT | 8am EST | 4pm GMT+4

STL PARTNERS

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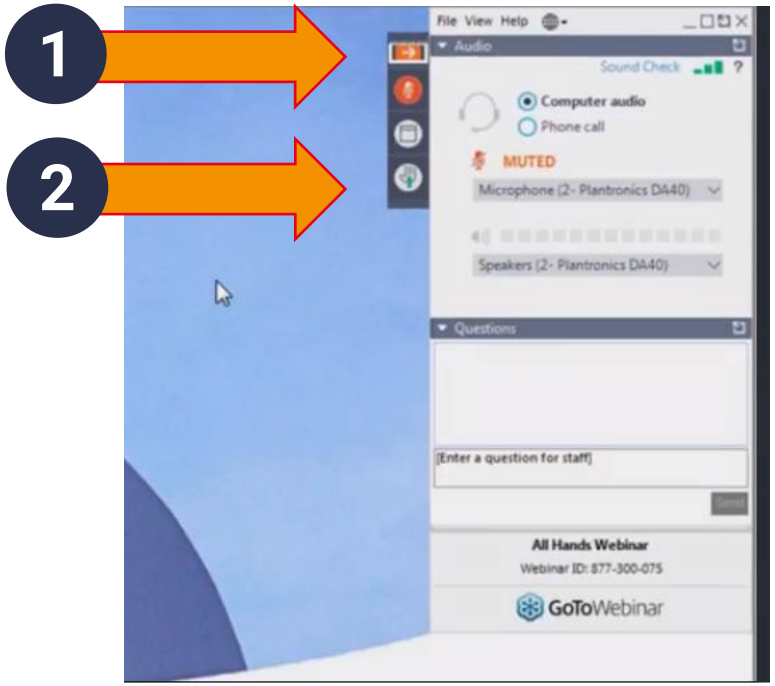


- You're in listen only mode
- If you need us, please type a comment
- Feel free to type questions throughout the session for Q&A – if your question isn't addressed in the panel discussion, you will receive a Q&A document in our follow-up
- We'll send you the slides and a recording shortly after the session - do share with colleagues

STL Partners' report on edge orchestration, sponsored by Nearby Computing, is available to download from our website

Presenters and panellists

Dalia Adib
Director, Consulting

STL Partners

Reah Jamnadass
Senior Consultant

STL Partners

Ani Keshishyan
Consultant

STL Partners

David Carrera
Co-founder & CTO

Nearby Computing

Sankar Venkatraman
Senior Vice President

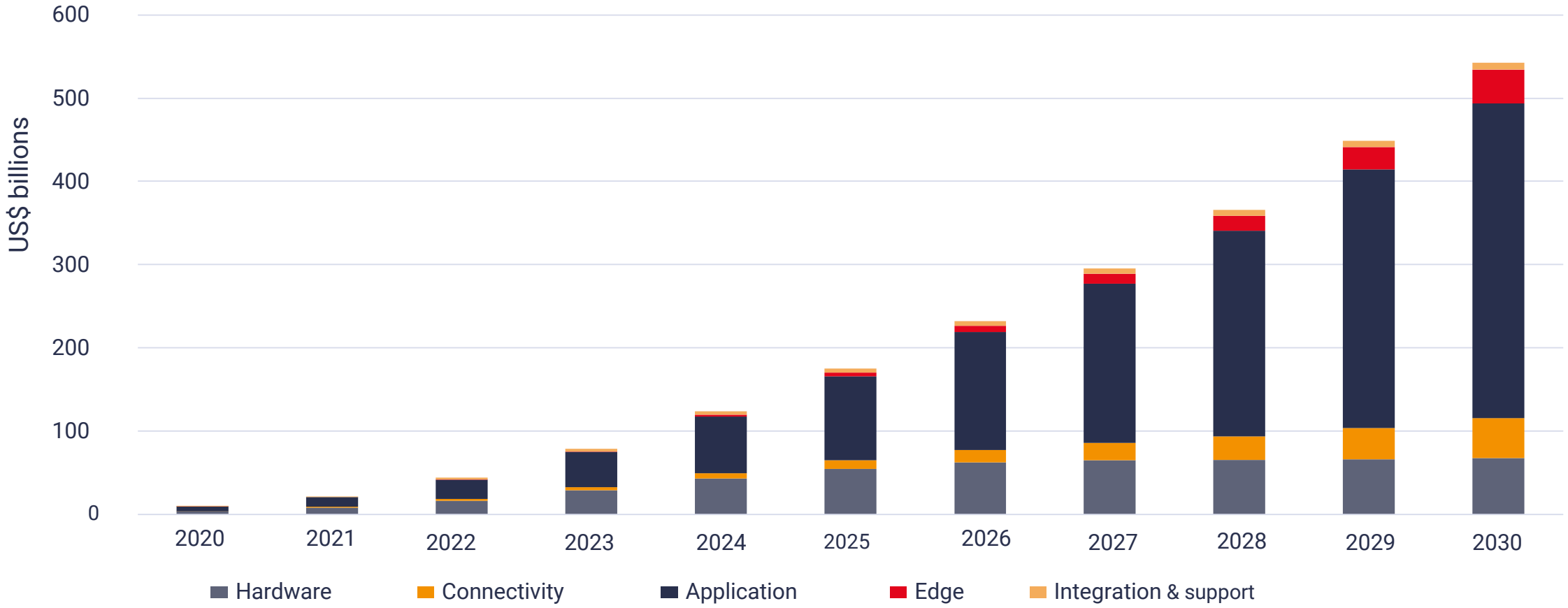
Detasad

Edge orchestration: what it is and why it's needed

Ani Keshishyan, Consultant (STL Partners)

By 2025, the market for edge computing is forecasted to be almost US$200bn

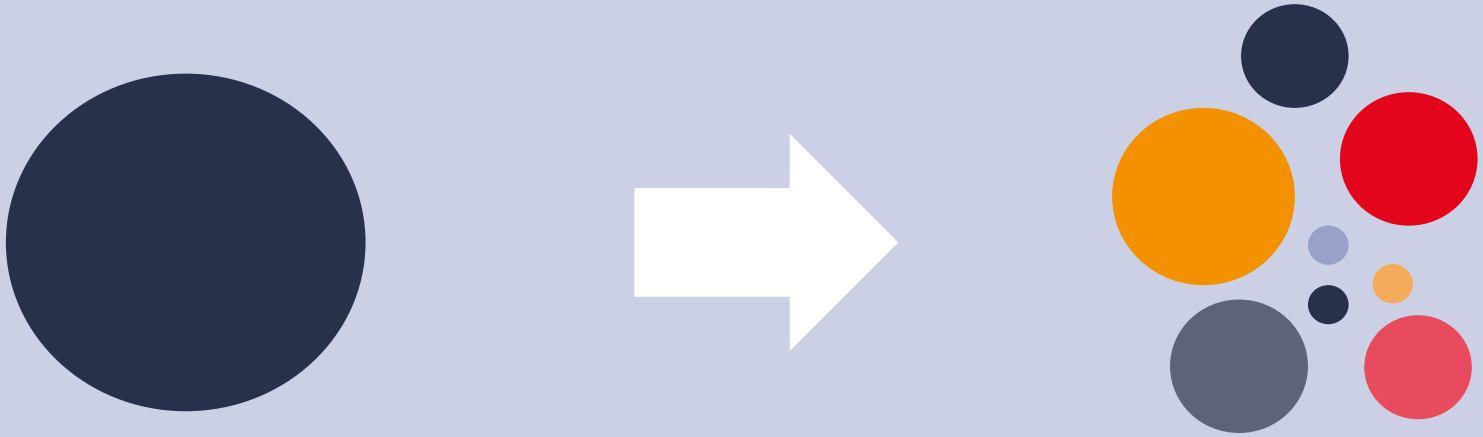
Total edge computing addressable revenue by value chain component, 2020 – 2030



Source: "Edge computing market sizing forecast", STL Partners

Edge poses new challenges on how enterprises and developers manage workloads

Application architectures are moving from centralised models to highly distributed models



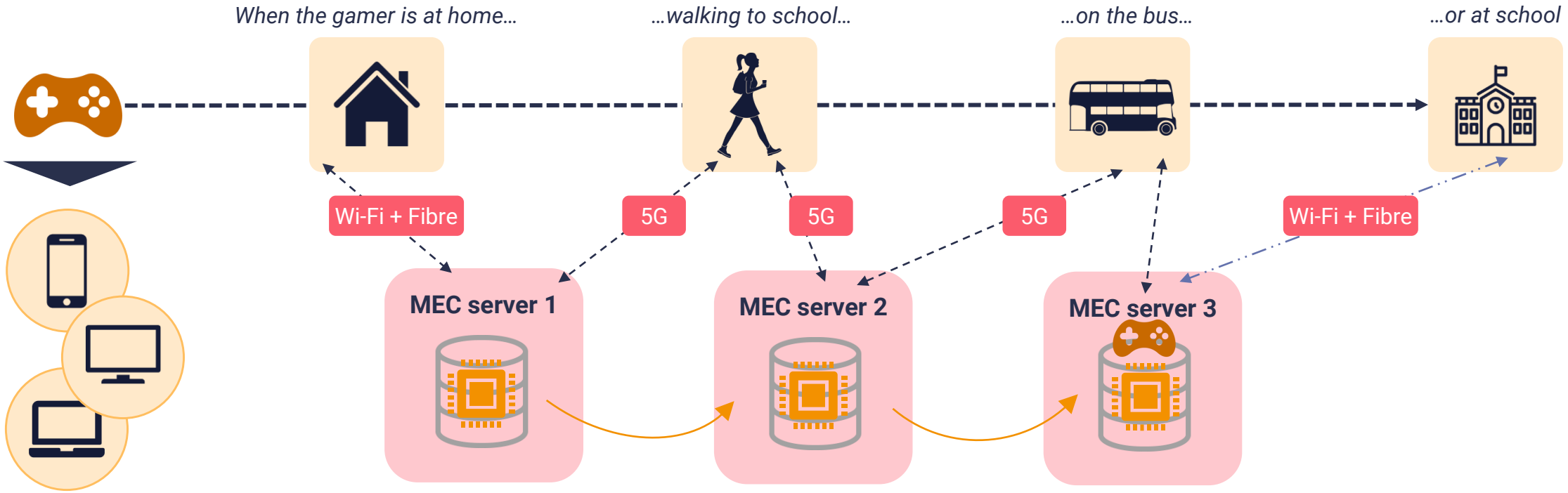
Centralised computing in a hyperscale data centre

Distributed computing on a spectrum of edge nodes across different types of edge

Edge use cases have strict performance requirements, which makes orchestration critical, especially in the context of the following scenarios:

- **Movements away from edge node**
- **Specific hardware requirements**
- **Fragmentation**
- **Fluctuations in network performance**

Edge orchestration in action: cloud gaming as a service

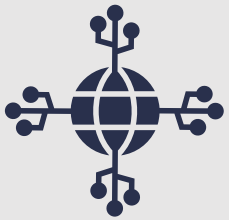


Edge computing benefits needed for cloud gaming as a service

Latency	Reliability	Reduced backhaul	Data localisation	Flexibility	Light device	Mobility	Resilience

Telcos also need edge orchestration to enable new services – many are exploring different business models and edge is enabling new services and revenue opportunities

1 Connectivity & networking (NaaS)



2 Platforms (IaaS/PaaS)

3 End-to-end solutions

Need for dedicated edge orchestration capabilities

Examples

vodafone AT&T

AT&T vodafone verizon — Azure/AWS Private MEC

verizon COX SK telecom

KDDI vodafone verizon Bell — AWS Wavelength / Azure Edge

verizon KDDI

There is confusion in the industry with what constitutes an edge orchestration platform and why it is needed

There are considerations in choosing a specific edge orchestration platform

Which elements of the stack do different vendors provide? What can this enable for me?

What different types of edge orchestration are there?

How can I justify investing in an edge orchestration platform? How will I secure a return on my investments?

But telcos are starting to think about this in the context of their evolving edge strategies

How can I manage highly distributed systems as I invest more in edge computing?

Is there a more automated way to do this?

How does an edge orchestrator fit in with my end to end orchestration solution?

Nearby ONE: orchestration for the REAL edge

David Carrera, Co-Founder & CTO (Nearby Computing)

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Why is now the time to rethink edge orchestration?

David Carrera
CTO and Co-Founder @NearbyComputing

February 2nd, 2022

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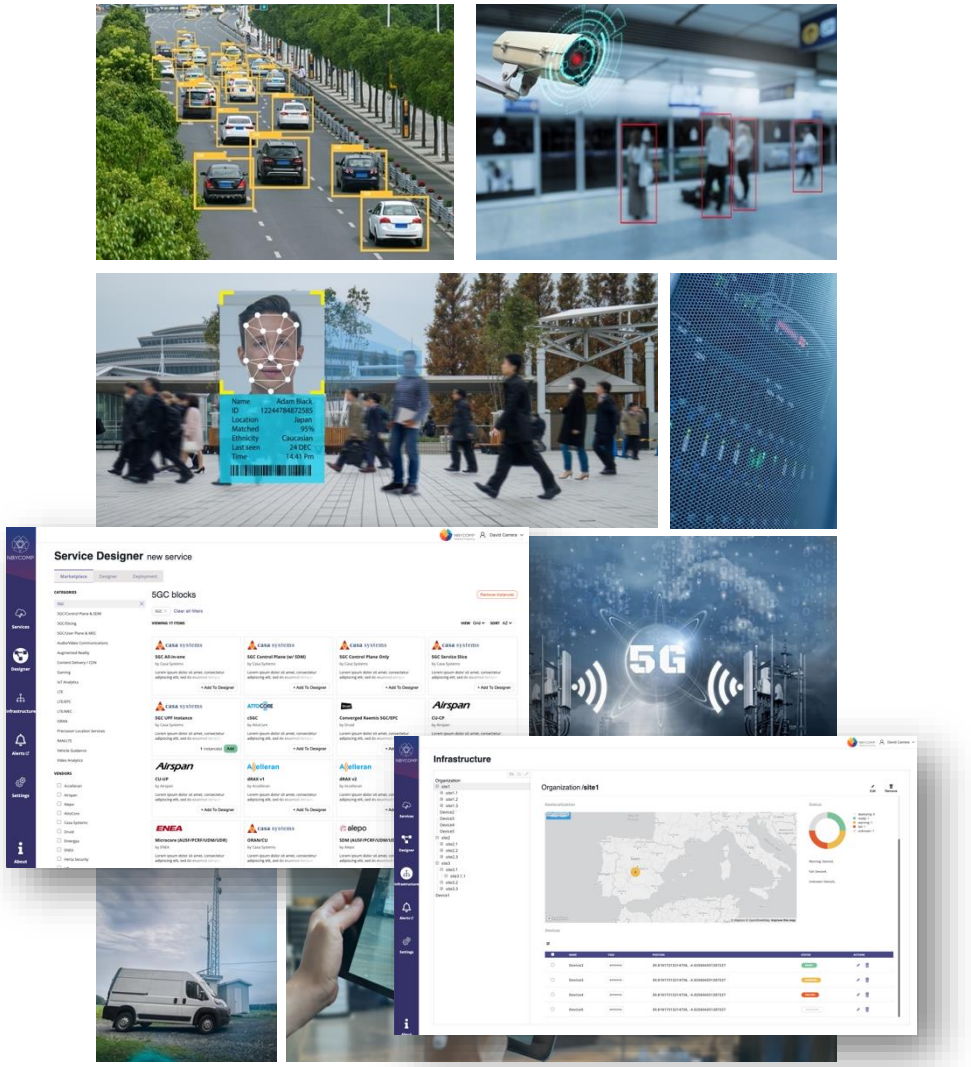
At the heart of EDGE COMPUTING

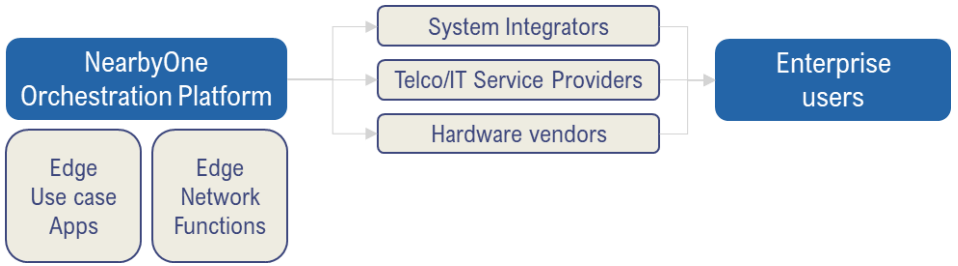


Nearby Computing is a company based in Barcelona, Spain, delivering Edge Computing end-to-end **management and automation** solutions through **its own edge orchestration platform** *NearbyONE.*

NearbyONE has proved to be **the most complete, versatile and performant edge automation tool in the market**.

Some of our customers and partners:

- Detasad
- Etisalat
- Cellnex Telecom
- Red Eléctrica de España (Spanish TSO)
- BASF
- City of Barcelona
- Hispasat
- Port of Bristol



Orchestration domains: differences

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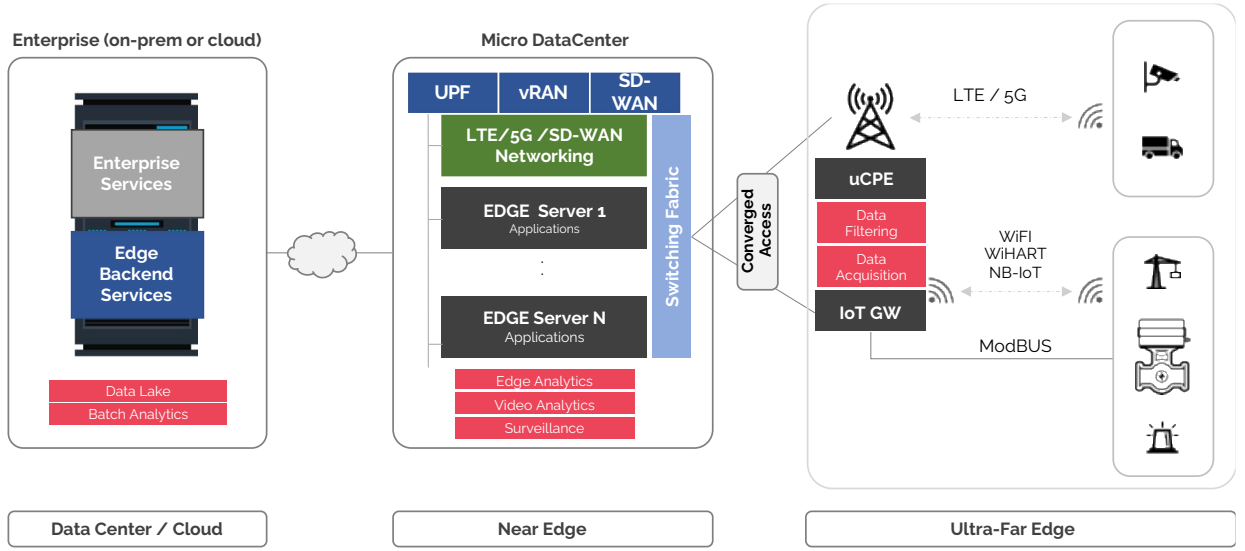
	Natural Space for Network Orchestration	Natural Space for Edge Orchestration
	Data Centre	Edge
Latencies	Homogeneous	Heterogeneous
Equipment Diversity	Discretized space	Almost continuous
Location / Transport Network	Availability Zones / Owned Transport	Distributed Sites / Mixed Owned + OTT
Resource Availability	Virtually Unlimited	Geolocated, Limited, Fragmented
Access Technology	Grouped by Services	Completely mixed Multi-Access Services
Cost of field technicians	Minutes / Present on site	Hours / Long distance away
Orchestrated Workload	Mainly MANO VNF management	CNFs and K8s Apps Multiple Tiers

Some Technology Overlap Exists

Although there is some technology overlap between Network Orchestration solutions and Edge Orchestrators,
the target of operation is very different



Real use cases: **the real EDGE**

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Beware: Edge Cloud is still *App-centric!*

CDN | Gaming | IoT Analytics

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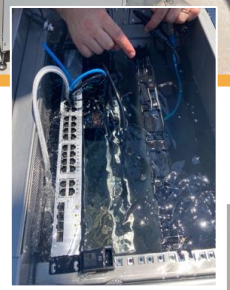
Edge Cloud

Far Edge

On-Prem



How to address the **operation challenges?**

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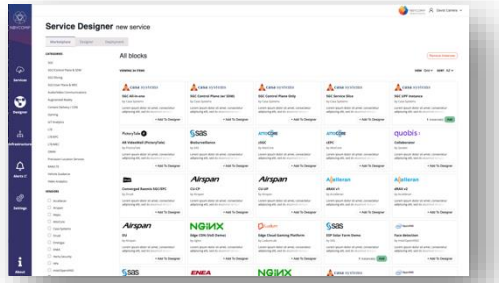

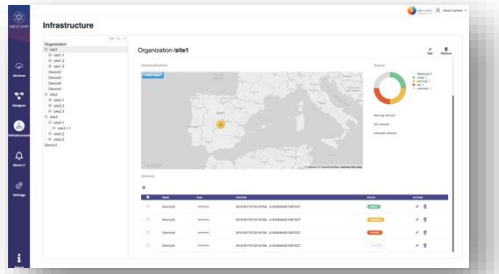

	Data Centre	Edge	
Latencies	Homogeneous	Heterogeneous	Automated SLI-driven Service Policies
Equipment Diversity	Discretized space	Almost continuous	Vendor Agnostic HW and Platform
Location / Transport Network	Availability Zones / Owned Transport	Distributed Sites / Mixed Owned + OTT	OTT Operation of Sites
Resource Availability	Virtually Unlimited	Geolocated, Limited, Fragmented	Performance-driven Service Placement
Access Technology	Grouped by Services	Completely mixed Multi-Access Services	Vendor Agnostic VNF / CNF
Cost of field technicians	Minutes / Present on site	Hours / Long distance away	nZTP Provisioning OTT
Orchestrated Workload	Mainly MANO VNF management	CNFs and K8s Apps Multiple Tiers	**APPLICATION FIRST!**

All provided from a **single pane of Glass**

- ⬇⬇ **Edge TCO**
- ⬆⬆ **Rapid Deployment**
- ⬆⬆ **New sources of revenue**
- ⬆⬆ **Open Edge Marketplace of Real Use Cases**

The real Edge **requires a mix of players**

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The 4 *myths* that hide the needs of the real Edge – players cannot work alone!

Hyperscalars Myth

Example: MySQL or Prometheus are not end-user use cases

First
A marketplace of standalone apps
~~is~~ is not
an enterprise use case

Telco Myth

Example: Privacy is a driver of many use cases

Second
Connectivity and Telco functions
~~are~~ are not
the central component of use case

An Edge Orchestrator glues all these pieces together for the real EDGE

Example: Most IoT use cases require cloud-based data lakes

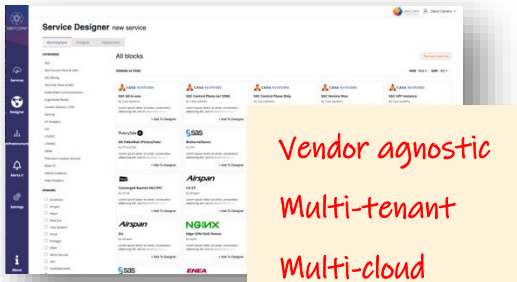
Third
Edge use cases
~~are~~ are never
edge-only use cases

IoT Platforms Myth

Example: ISVs are access agnostic and don't understand MEC

Fourth
Application developers will
~~adopt~~ not adopt
specific APIs for the Telco Edge

Edge Cloud Platforms Myth



Vendor agnostic
Multi-tenant
Multi-cloud
Open Marketplace

An **Edge Orchestrator** glues all the elements of the real EDGE to allow **System Integrators and Service providers** express complex **policies end-to-end** (Apps + xNFs + Infra)

nZTP Sites
Declarative Policies
SLA-driven Policies
Automation Control loops

Nearby One: One-stop-shop for Edge Operations

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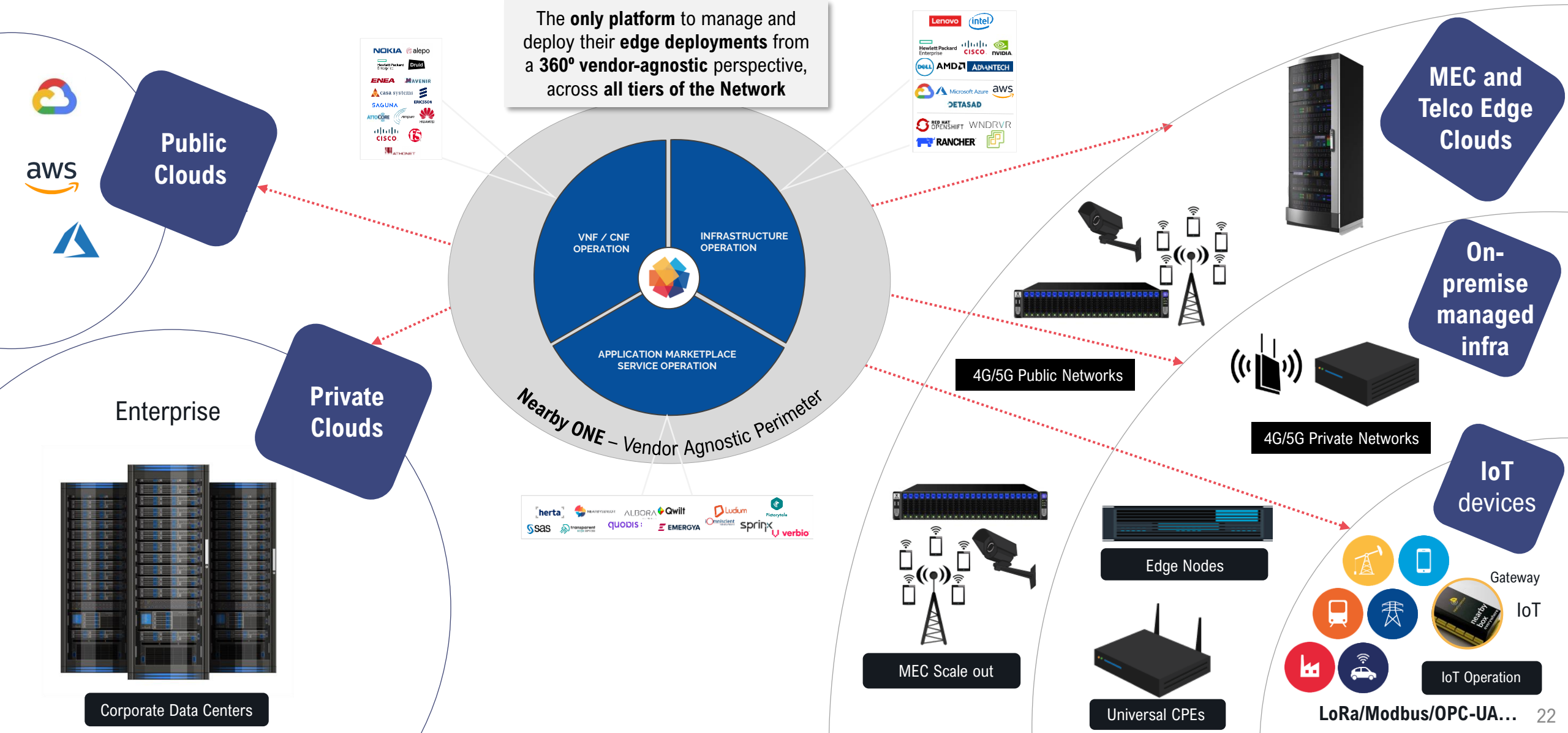
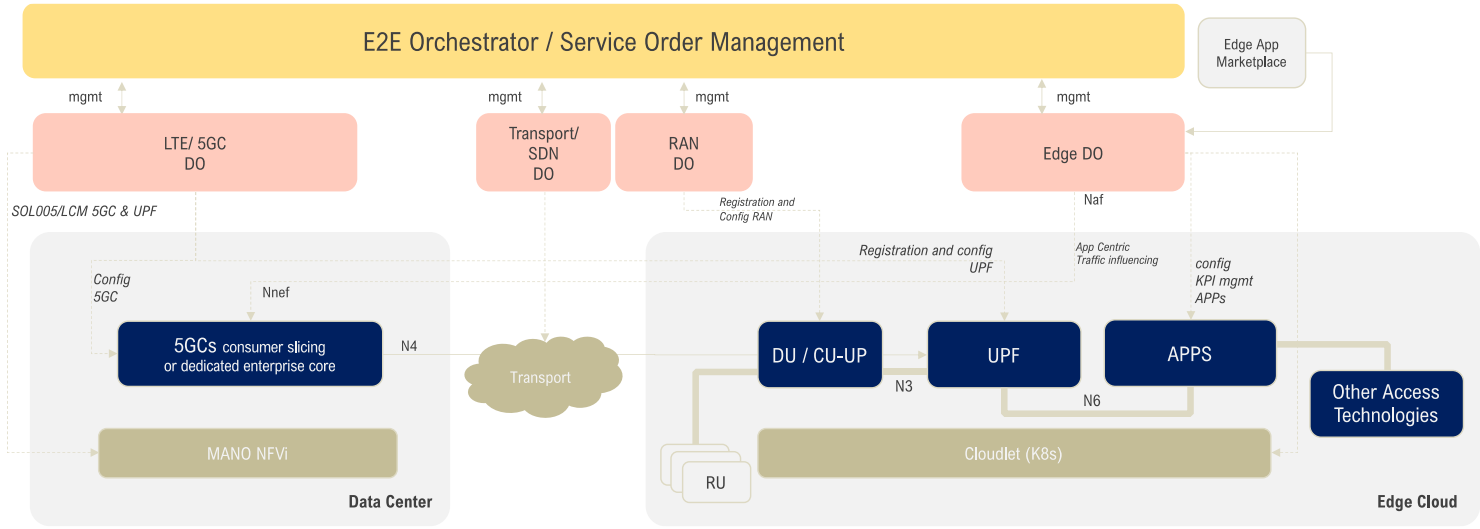
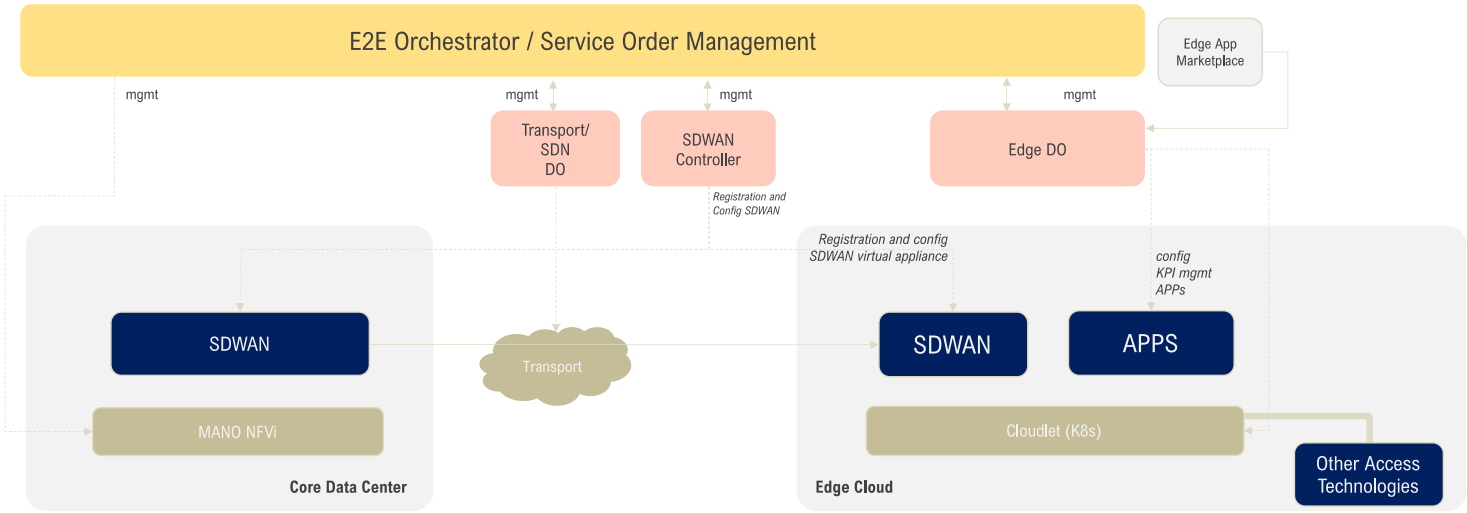
The **only platform** to manage and deploy their **edge deployments** from a **360º vendor-agnostic** perspective, across **all tiers of the Network**



What is the **E2E view for real**?

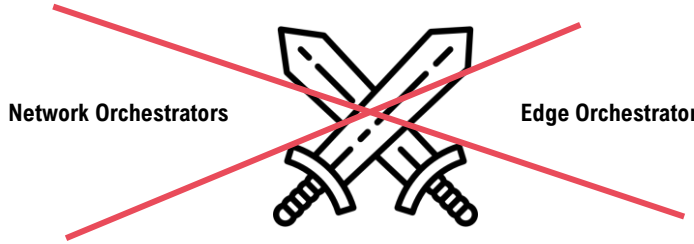


Example Scenario:
Centralized 5GC control plane for Edge Cloud / Enterprise Edge



Example Scenario:
SD-WAN site interconnect for Edge Cloud / Enterprise Edge

Are different **DO's really competitors**?



In fact, they are complementary pieces of the **E2E orchestration puzzle**!
They work together to help service providers deliver much more complex **edge services in a few clicks**!

Thank you.

We are happy to schedule a meeting for a deeper discussion of Nearby Computing's technology and market potential.

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Barcelona - nearbycomputing.com – @nbycomp - nbc@nearbycomputing.com

Edge computing in the Kingdom of Saudi Arabia

Sankar Venkatraman, Senior Vice President (Detasad)

DETASAD

Edge Computing in KSA

Sankar Venkatraman, SVP Digital Business, Detasad

Pillars of KSA's Vision 2030

Thriving Economy

- **Increase non-oil GDP from 16% to 50%**
  - Automated factories with seamless M2M integration
  - New avenues of revenue generation like Mining
- **Improve Logistics ranking from 49 to 25**
  - Need to improve real time monitoring and OEE
- **Increase private sector contribution from 40% to 65% of GDP**
  - Need abundant compute capacity with zero-time for provisioning
- **To be in the top 10 countries in the Global competitiveness index**

Vibrant Society

- 3 Cities to be recognized in top 100
  - AI based edge devices for efficient city management
- Raise the Social Capital Index position from 26 to 10
- More than double the number of heritage sites
  - Real time monitoring of reserves
- Increase house-holding spending on entertainment from 2.9% to 6%
  - Improve localized streaming with low latency
- Increase capacity from 8 Million to 30 Million Umrah visitors
  - Real time monitoring of people gathering

Ambitious Nation

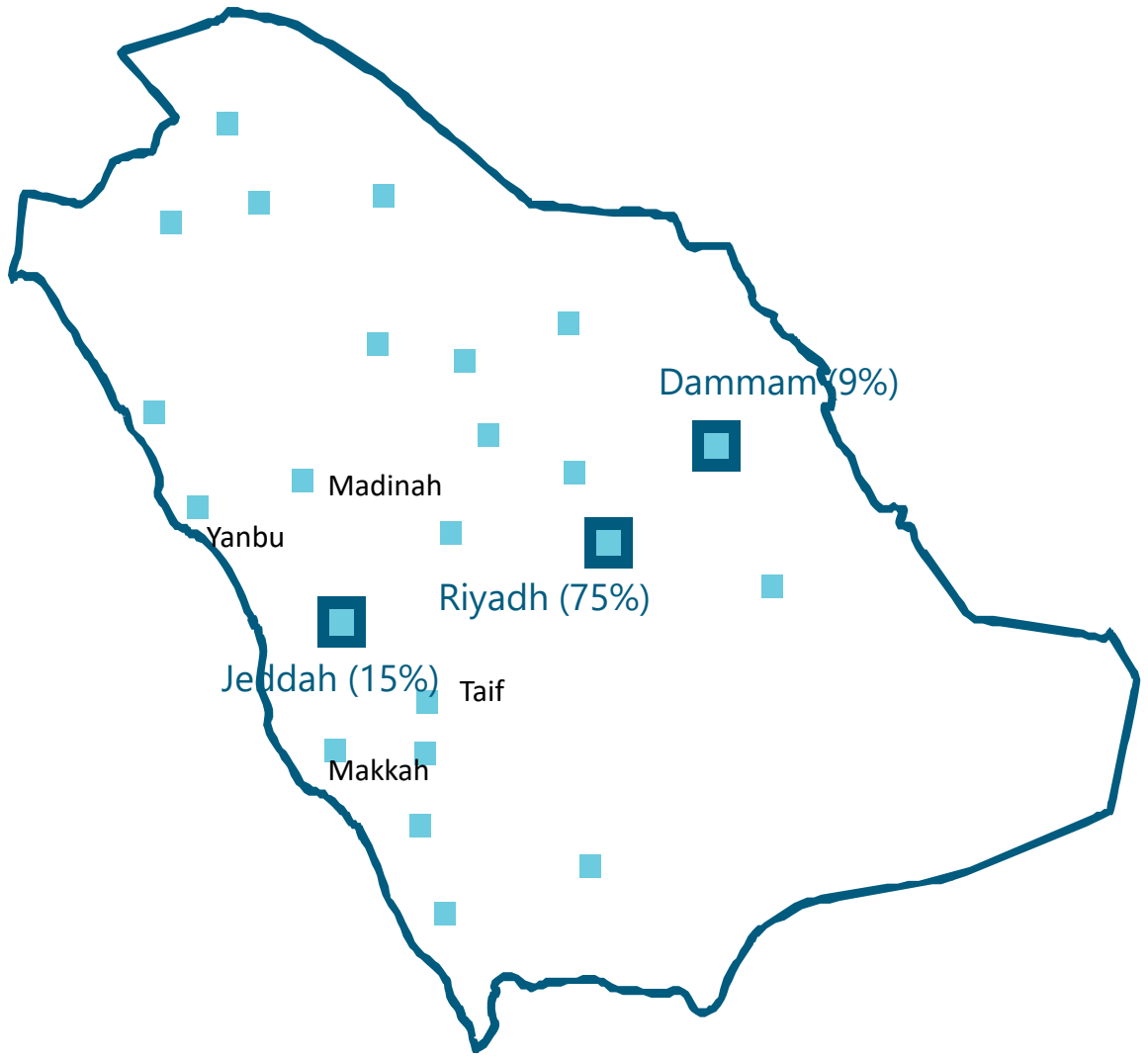
- Raise the E-Government survey index from 26th position to top 5 nations

The most critical success factor to realize Vision 2030 Goals ….

Cloud Proliferation with real time processing

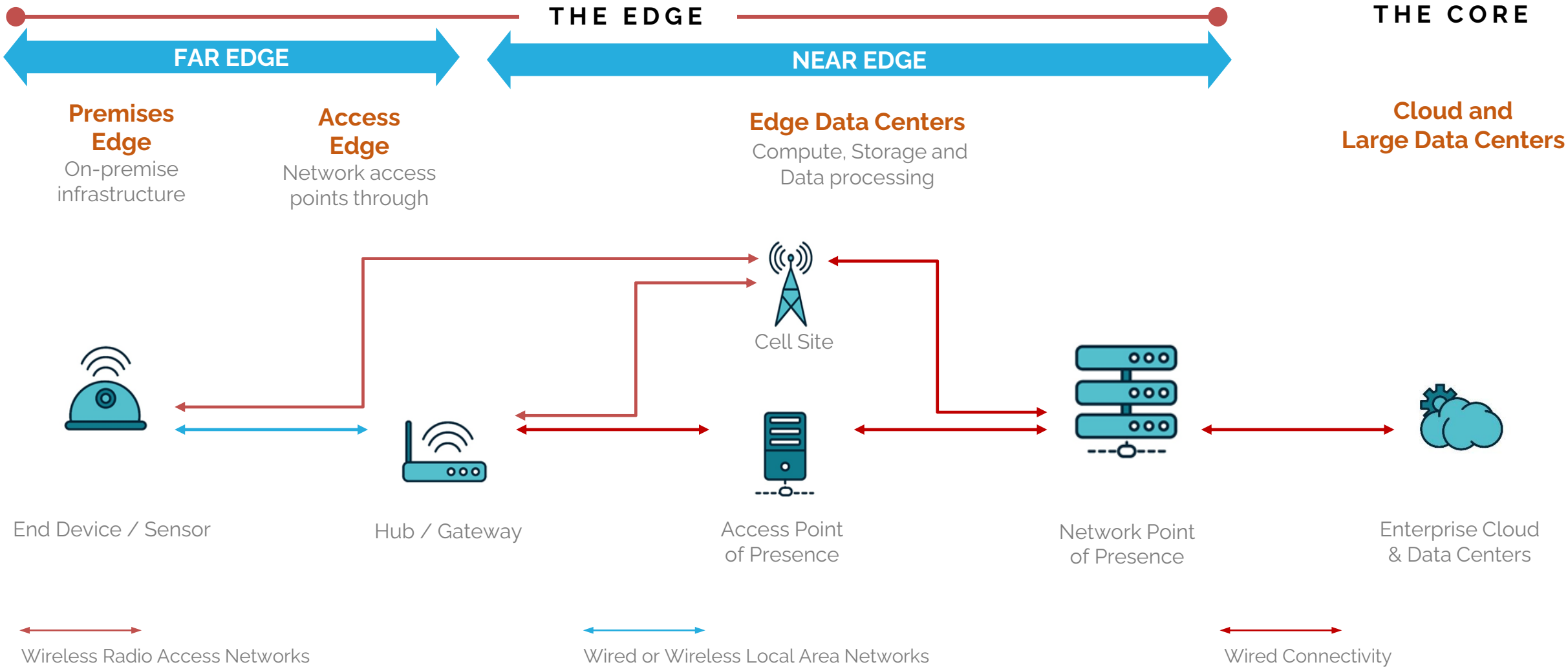
Why is Edge Computing relevant in the Kingdom

City	Population
Riyadh	7,700,000
Jeddah	4,697,000
Makkah	2,042,000
Al-Madinah	1,500,000
Khamis Mushait	1,350,000
Dammam	1,252,523
Abha	1,093,705
Ha'il	950,000
Hofuf	858,395
Al-Mubarraz	837,000
Sakakah	780,000
Taif	700,000
Jubail	684,531
Buraydah	670,000
Tabuk	670,000
Najran	505,652
Khobar	500,000
Qatif	474,573
Al Bahah	366,000
Hafr Al-Batin	360,000
Jizan	319,119
Quarayyat	310,000
Yanbu	300,000
Dhahran	240,750
Bisha	206,000
Ras Tanura	153,933
Khafji	150,000
Ar Rass	115,000



- Almost 75% of DCs are located in and around Riyadh
- Many of the DCs are for captive purposes
- Only few large DC operators in KSA
- Several Towns/Municipalities are still uncovered
- Strategic locations like Ports, Mines, Rigs are uncovered
- Latency is a big concern

Unpacking the Edge



Case Study – Edge Computing in Mining

Ore Tracking:-

Ability to track ore size realtime reduces downstream blockages

Processing Vibration Data:-

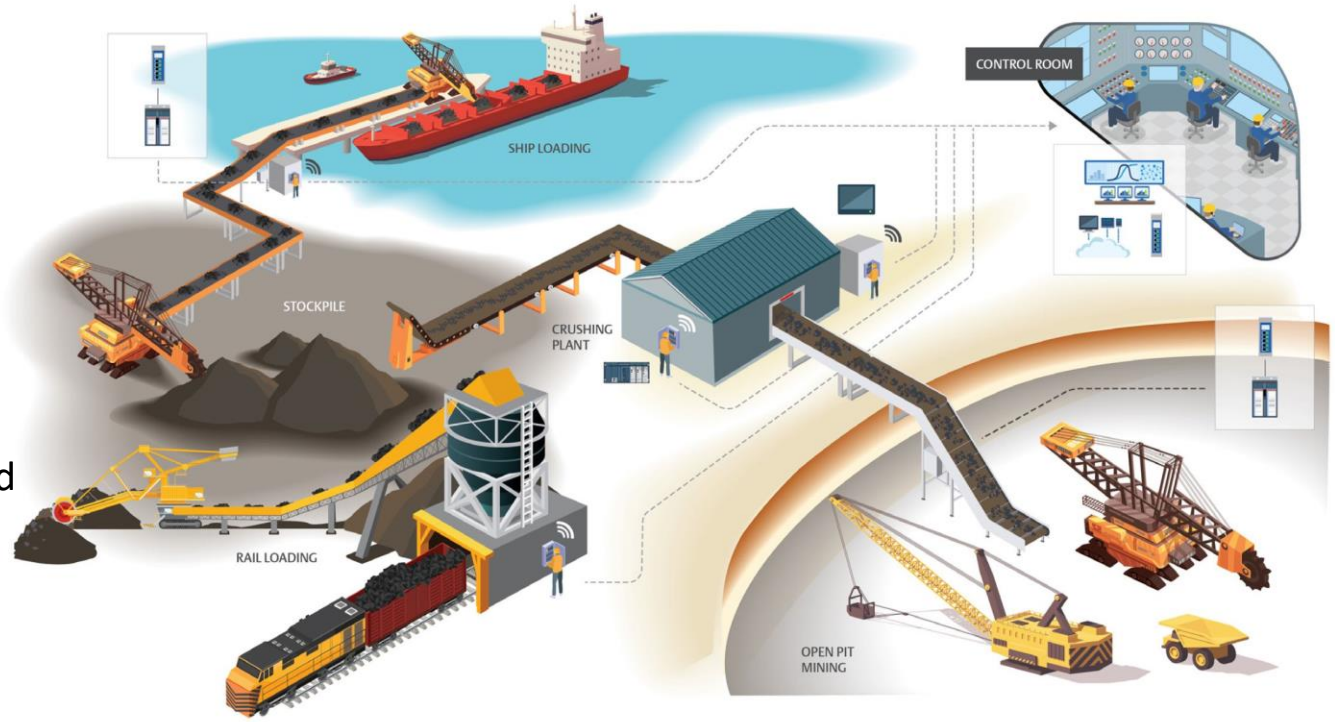
This is very critical to determine machine fatigue

Optimized route planning:-

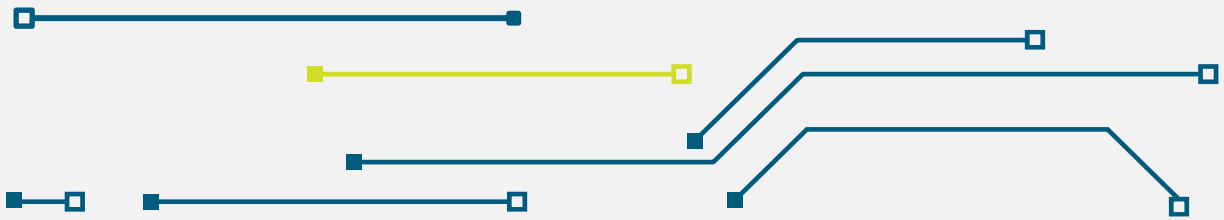
Haulage truck routes can be organized in conjunction with other mechanical equipments like excavators and crushers

Optimization of Power consumption:-

Power surges can be avoided and diesel engines can reduce carbon emission

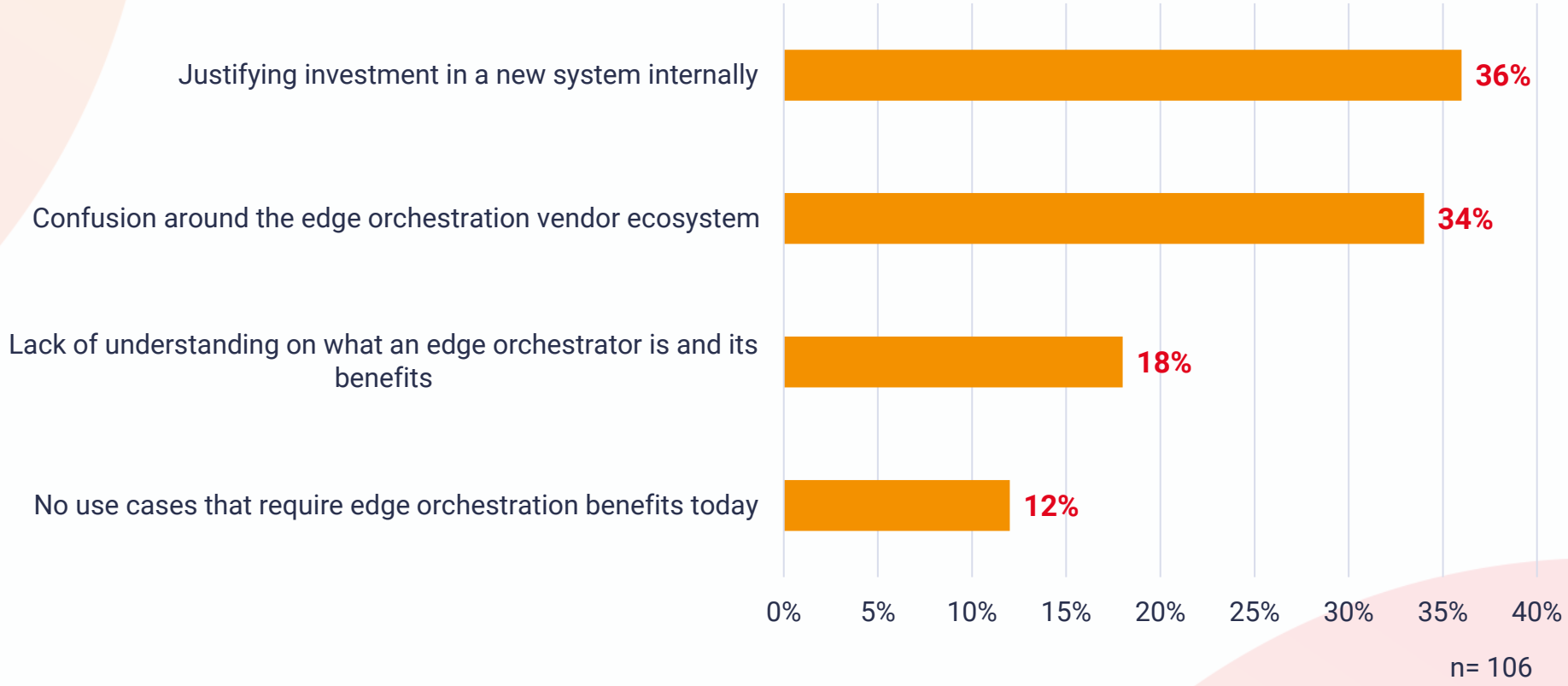


Thank You



AUDIENCE POLL

What do you see as the biggest challenge with edge orchestration?



Q&A