# The road to cloud-native disaggregation: Do’s and don’ts from lessons learned

Webinar

20th July 2022

In partnership with:

DRIVENETS

STL PARTNERS

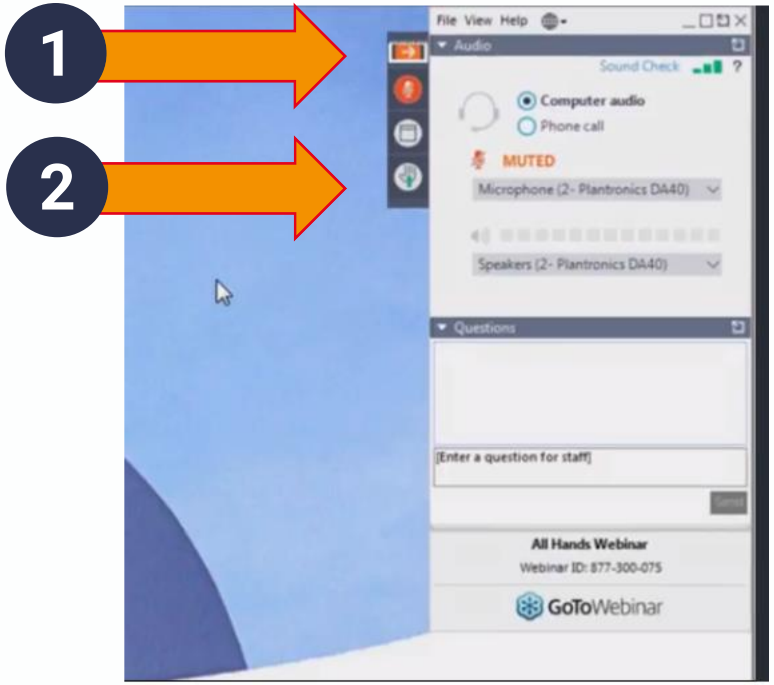
# Agenda

| | | |
|---|---|---|
| 1 | **Introductions** | 09:00 – 09:05 |
| 2 | **The road to cloud-native disaggregation: Do's and don'ts from lessons learned** | 09:05 – 09:25 |
| 3 | **DriveNets: Network Cloud as an innovation catalyst** | 09:25 – 09:45 |
| 4 | **Q&A session** | 09:45 – 10:00 |

PARTNERS

# GoToWebinar

- 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 at the end
- We'll send you the slides and a recording shortly after the session do share with colleagues
- On Twitter? Tweet us @STLPartners



# Our presenters for today's session

**Phil Laidler**
Managing Director, Consulting
**STL Partners**

**Yesmean Luk**
Principal Consultant
**STL Partners**

**David Gordon**
Consultant
**STL Partners**

**Run Almog**
Head of Product Strategy
**DriveNets**

# Agenda

| | | |
|---|---|---|
| 1 | **Introductions** | 09:00 – 09:05 |
| 2 | **The road to cloud-native disaggregation: Do's and don'ts from lessons learned** | 09:05 – 09:25 |
| 3 | **DriveNets: Network Cloud as an innovation catalyst** | 09:25 – 09:45 |
| 4 | **Q&A session** | 09:45 – 10:00 |

# The road to cloud-native disaggregation

What does it look like and what are the do's and don'ts that we can take away from lessons learned

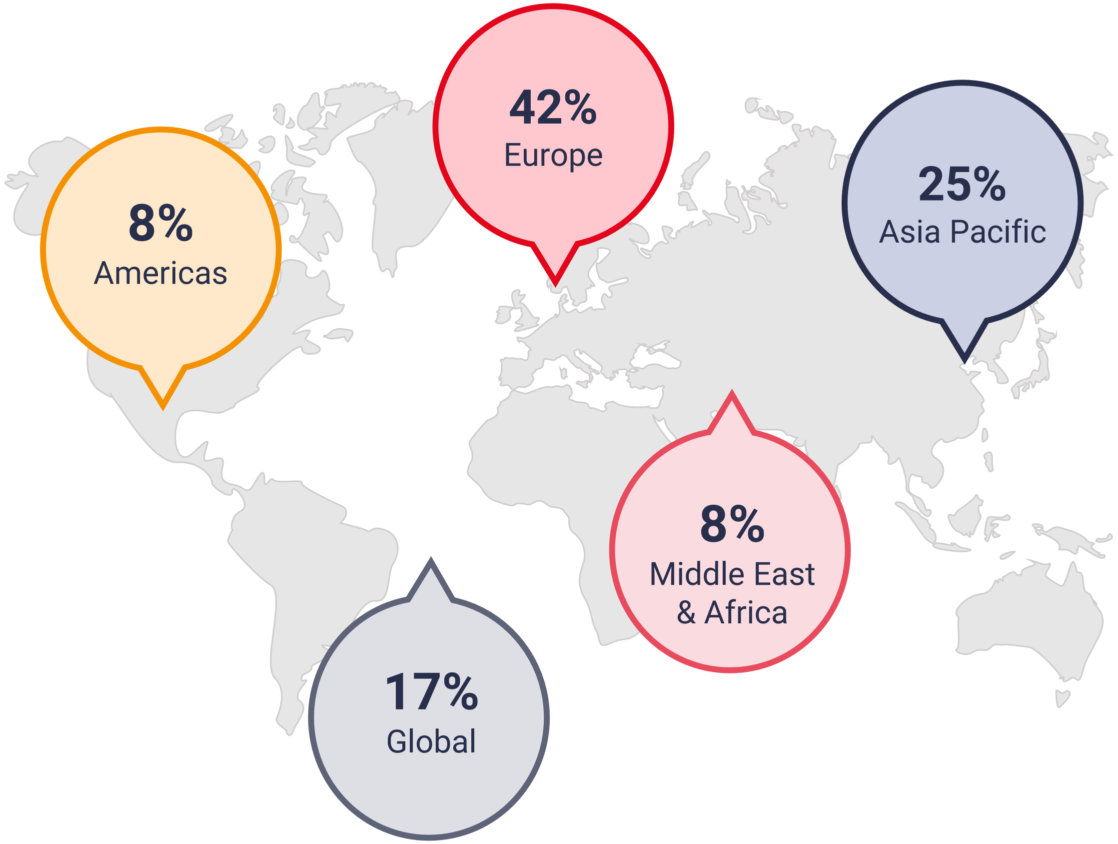
Yesmean Luk, Principal Consultant

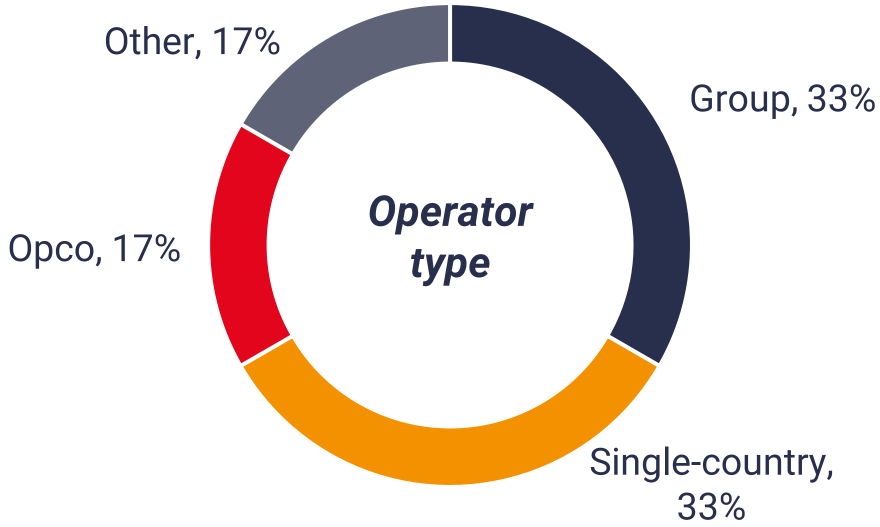
David Gordon, Consultant

STL PARTNERS

# Our findings are based on a research programme with 12 senior executives from telcos operators globally...

**Our research interviewees spanned across multiple regions and types…**



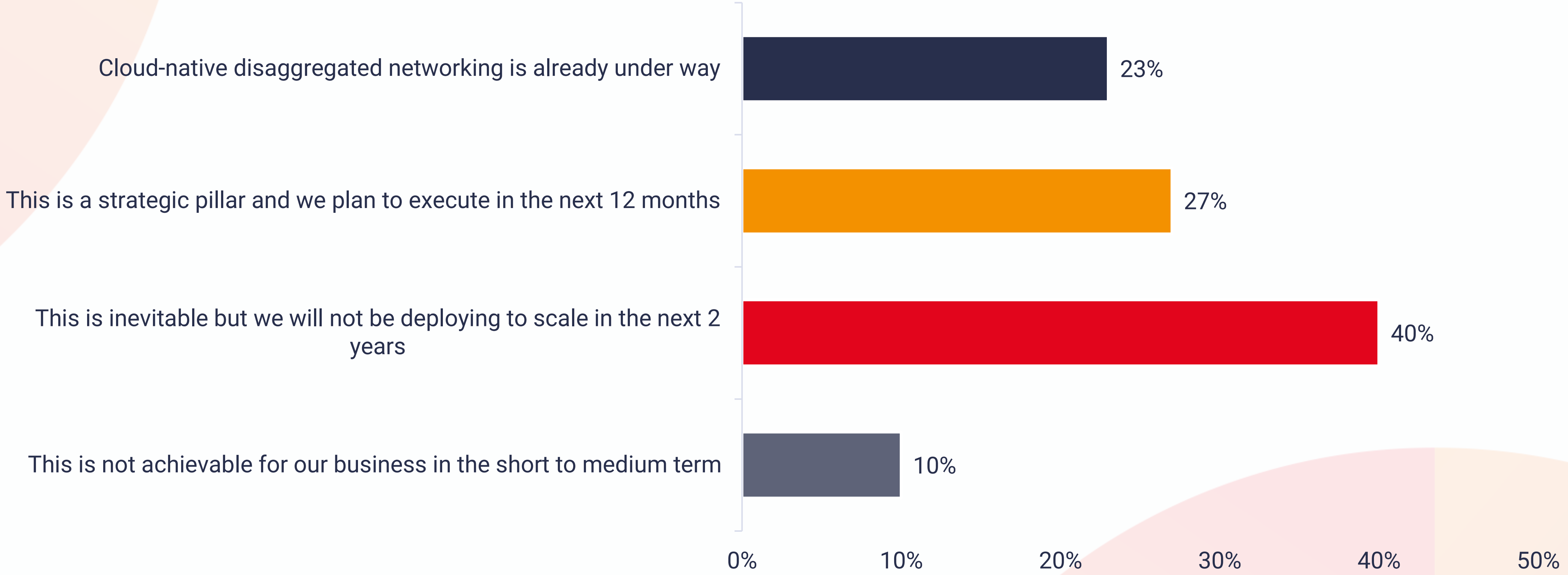




**Example interviewee roles:**

- *Director, Technology Strategy*
- *Chief Architect*
- *Director, Network Strategy*
- *Head of Strategy & Innovation*

## Audience poll #1

# Which statement best applies to you or an operator you know in terms of the move to cloud-native network disaggregation?

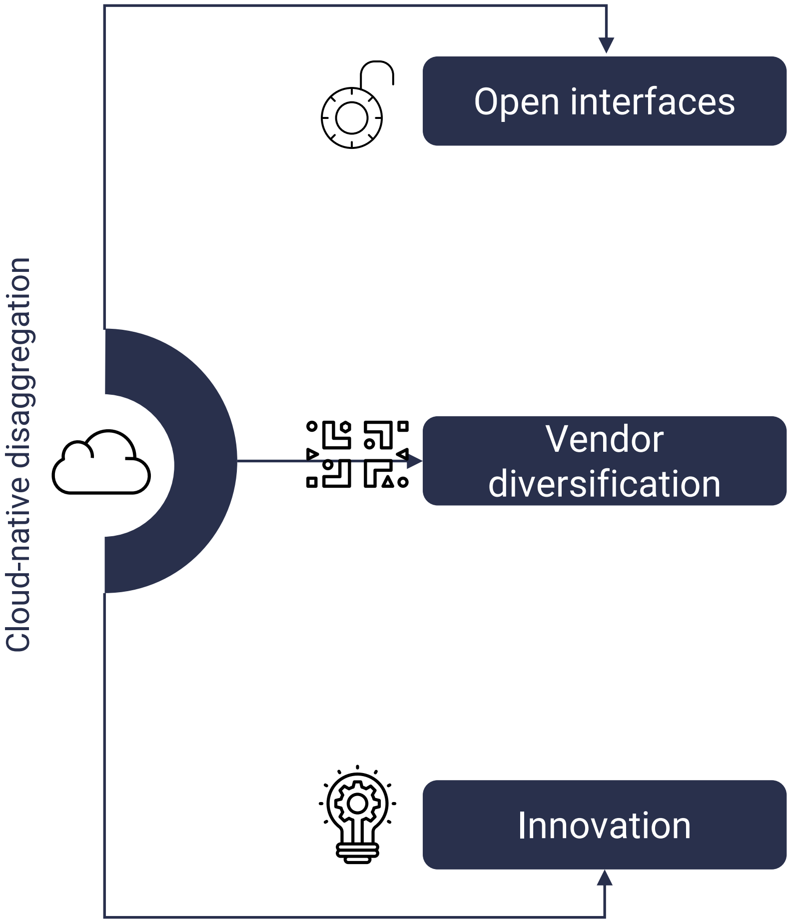


# …to understand the 'why', 'how' and 'how far' operators are in their journey in moving to cloud-native disaggregation

**We highlight five key findings:**

- Cloud-native disaggregation is not just about open interfaces but also innovation and vendor diversification
- There is no 'standard' roadmap or strategy – every operator's strategy and approach is different
- Those that are focused on cost pursue this in tandem with extreme automation but some also use this as a negotiation tool
- Those focused on innovation want to break any constraints and see disaggregation as a means of improving feasibility of innovation
- Leadership buy-in can either be an enabler of disaggregation or a barrier to any change

# Cloud-native disaggregation is not just about open interfaces but also innovation and vendor diversification




- **50%** of interviewees mentioned open interfaces and architecture as a key driver for disaggregation.
- This enables separation between hardware and software, or between software components or layers of the 'stack'.

"Open networking is one of our strategic initiatives at [CSP] and has become more intuitive, around functions and interfaces clearly defined, open interfaces etc."
***#5 Global group operator***

"In terms of breaking it down, the promise is having software that is hardware agnostic."
***#6 Asian challenger operator***

- **38%** of interviewees mentioned vendor diversification as a key driver for disaggregation.
- This is about reducing vendor lock-in, having a multi-vendor ecosystem and being able to pick 'best of breed' partners.

"If you look at the IP router global market, there is consolidation, not quite like the RAN but the 3-5 biggest vendors probably have 90% market share, we are keeping an eye on this at the moment"
***#5 Global group operator***

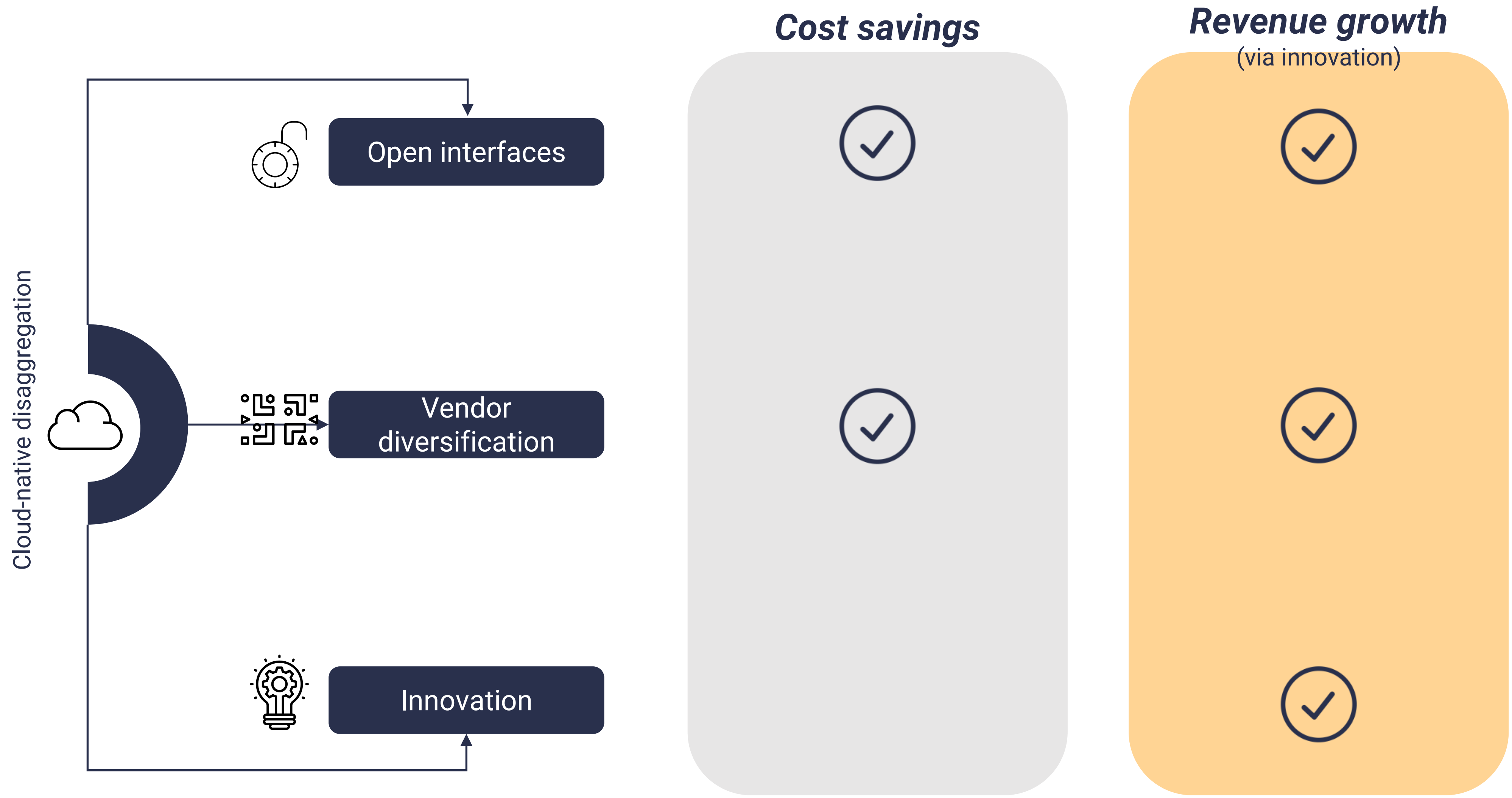
"There is a drive within [CSP] to open up the landscape of vendors, we want to be able to choose from new suppliers, disaggregation lowers the barriers to entry."
***#3 European group operator***

- **33%** of interviewees mentioned disaggregation as a strategic investment for greater innovation.
- This can be about enabling new types of products or services, such as edge computing (in being able to distribute the user plane functions).

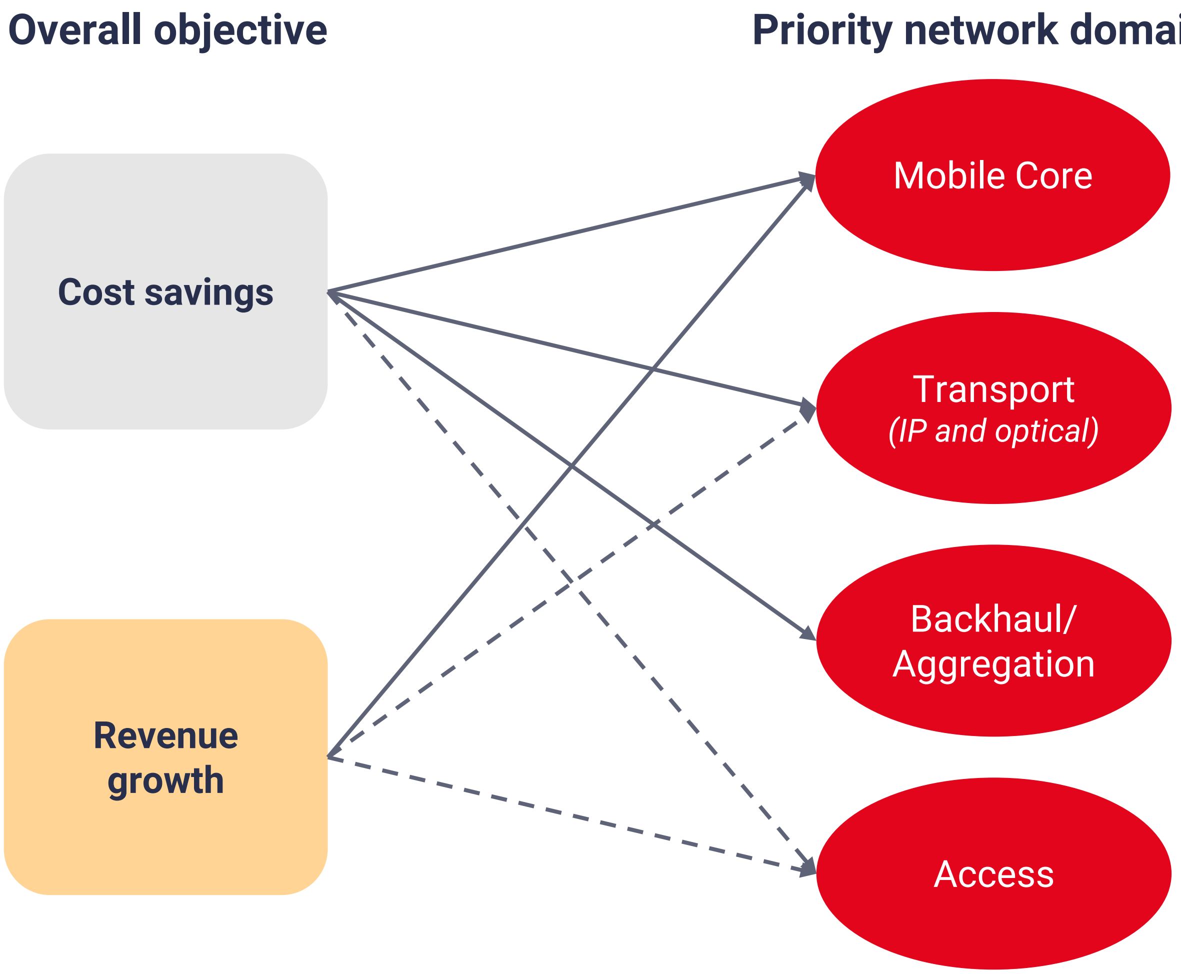
"Disaggregation opens up the environment and this provides cost and operations benefits but also drives faster innovation."
***#3 European group operator***

"Network disaggregation has been a strategic objective, in decentralising our network topology and architecture for new innovative edge enterprise use cases."
***#1 North American operator***

# These drivers to pursue cloud-native disaggregation ultimately map to two broad objectives



# There is no 'standard' roadmap or strategy – every operator's strategy and approach is different




- Most operators have focused on moving to a virtualised or cloud-native core with 4G and/or 5G
- At least 50% of interviewees who focus on 5G core do this for innovation. Those that do this for cost reasons do so because the core domain is seen as much more mature than other domains

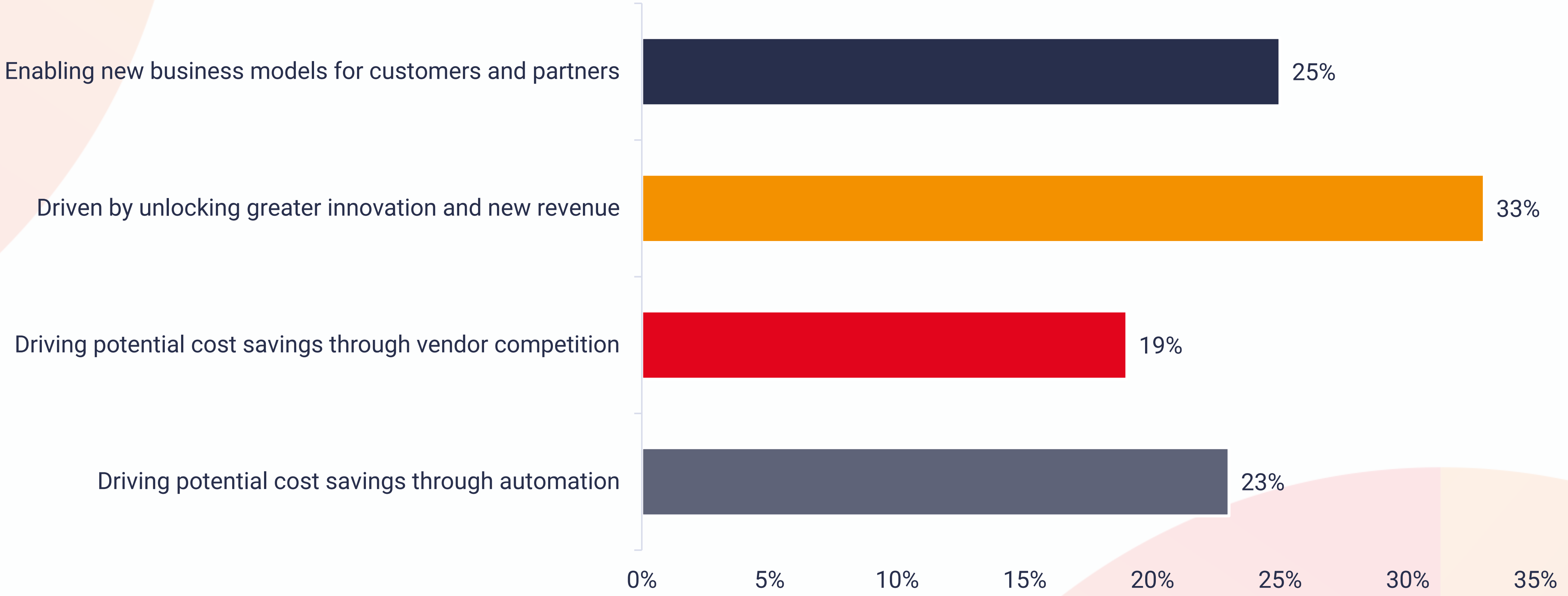
- For those that highlighted this domain, the most common factor mentioned is cutting down the cost of IP transport as operators scale and driving greater automation
- In some unique cases, this is an avenue for innovation in certain types of market settings

- Cost savings is seen to vary a lot depending on the fibre concentration (more ownership in some markets, more leasing in others).
- Some operators have cited disaggregation in the small routers, switches and cell site gateways here as interesting as traditional vendor solutions are expensive

- Open RAN was mentioned in at least 50% of interviews given how CapEx-intensive the radio access network is. However, the cost savings of open RAN are yet to be proven.
- Some see innovation as being a benefit of open RAN with xApps and rApps but this is also seen to be too early days to qualify/quantify

## Audience poll #2

# What is the *primary* driver to embrace cloud-native disaggregation for your organisation?



# The way that telco operators pursue cost savings via cloud-native disaggregation comes in two different forms

STL PARTNERS

**Pursuing cloud-native disaggregation in tandem with automation and convergence**

- Some operators see the pursuit of cloud-native disaggregation as complementary to the pursuit of greater network automation.
- This is primarily pursued heavily by some of the leading operators, where teams and employees are incentivised to try automating tasks.
- With greater abstraction within the network, operators can drive greater automation across the end-to-end delivery lifecycle.

**Using the concept of cloud-native disaggregation as a commercial tool**

- Some operators also see disaggregation as a means of enabling greater vendor competition, and as a result, as a means of changing the negotiating position with existing vendor partners.
- These can include CSPs that are still heavily reliant on vertically integrated solutions from incumbent vendors.
- Interviewees have cited cost savings from this but we argue this can only be achieved as a short-term outcome and not as longer term savings.

"[Automation, disaggregation] It's a chicken and egg thing. You automate to enable you to disaggregate, but you disaggregate to enable not just domain automation but cross-domain automation"

***#1 N.American operator***

"Disaggregation brings the ability to separate the network in different ways… more broadly, we are looking at disaggregation, automation and cloudification."

***#7 Group operator, EMEA***

"It is all about cost savings for us, shifting to becoming more opex-oriented vs. capex-heavy. Looking at building a common telco cloud platform and introducing more automation"

***#11 APAC operator***

"Our approach was first to verify the value [of disaggregation] on savings and we looked at different areas to disaggregate. Sometimes costs are higher with challenger vendors than our incumbents, it could be something about our good negotiations with them"

***#4 Multi-country operator, Europe***

# The way that telco operators pursue cost savings via cloud-native disaggregation comes in two different forms

## Pursuing cloud-native disaggregation in tandem with automation and convergence

- Some operators see the pursuit of cloud-native disaggregation as complementary to the pursuit of greater network automation.
- This is primarily pursued heavily by some of the leading operators, where teams and employees are incentivised to try automating tasks.
- With greater abstraction within the network, operators can drive greater automation across the end-to-end delivery lifecycle.

## Using the concept of cloud-native disaggregation as a commercial tool

- Some operators also see disaggregation as a means of enabling greater vendor competition, and as a result, as a means of changing the negotiating position with existing vendor partners.
- These can include CSPs that are still heavily reliant on vertically integrated solutions from incumbent vendors.
- Interviewees have cited cost savings from this but we argue this can only be achieved as a short-term outcome and not as longer term savings.

### Specific areas mentioned

- RAN (open RAN)
- Optical transmission and IP routing
- Cell site routers
- 5G core
- Fixed BNGs

# Some operators have placed more emphasis on innovation as a reason to pursue for cloud-native disaggregation

STL PARTNERS

Jointly driven by technology teams and lines of business (e.g. enterprise, product)

**WHAT DOES THIS LOOK LIKE**

Focus on disaggregation and cloud-native networking as a means of deriving external outcomes:

- New types of services (e.g. edge computing)
- New business models for customers (e.g. on-demand models)
- Better feasibility of innovation

Overall buy-in into the vision and engagement from across the organisation

- Senior management (e.g. CEO, CFO),
- Lines of business (enterprise, consumer)

**Specific areas mentioned**

- Mobile core (5G)
- Enterprise CPE
- Cell site routers
- IP routing (in specific markets)

“We are moving to a fully cloud-native mobile core, not because it’s a significant cost bucket to address but more a big revenue generator.”
***#5 Group operator, Global***

“One of the key innovation domains we are seeing is in the IP transport. Given the nature of our market, there is a lot to do in IP transport”
***#6 APAC incumbent operator***

“The major driver was looking at our revenue breakdown: what services we are selling at what margin, what’s growing vs. what’s declining and it was clear we had to focus on new services.”
***#12 International wholesale carrier***

“Disaggregation is interesting as it enables edge use cases and to provide the best user experience for customers. Once bandwidth hits a ceiling, the next differentiation is latency.”
***#1 N.American operator***

# We lay out four key challenges/barriers slowing down progress in moving to a cloud-native disaggregated network

### Lack of leadership/wider stakeholder buy-in

Many individuals beyond the technology teams still lack an understanding of the concept ***and*** the applicability of cloud-native networking and disaggregation to wider organisational objectives, which restricts the scope and progress for change.

### Lack of internal skills and capabilities

Many interviewees cited the lack of the relevant skills, capabilities and expertise in working in a more agile software-centric model, for example the need for software development and coding skills.

**Primary challenges and barriers to driving cloud-native networking and disaggregation**

### Inertia from culture and mindset

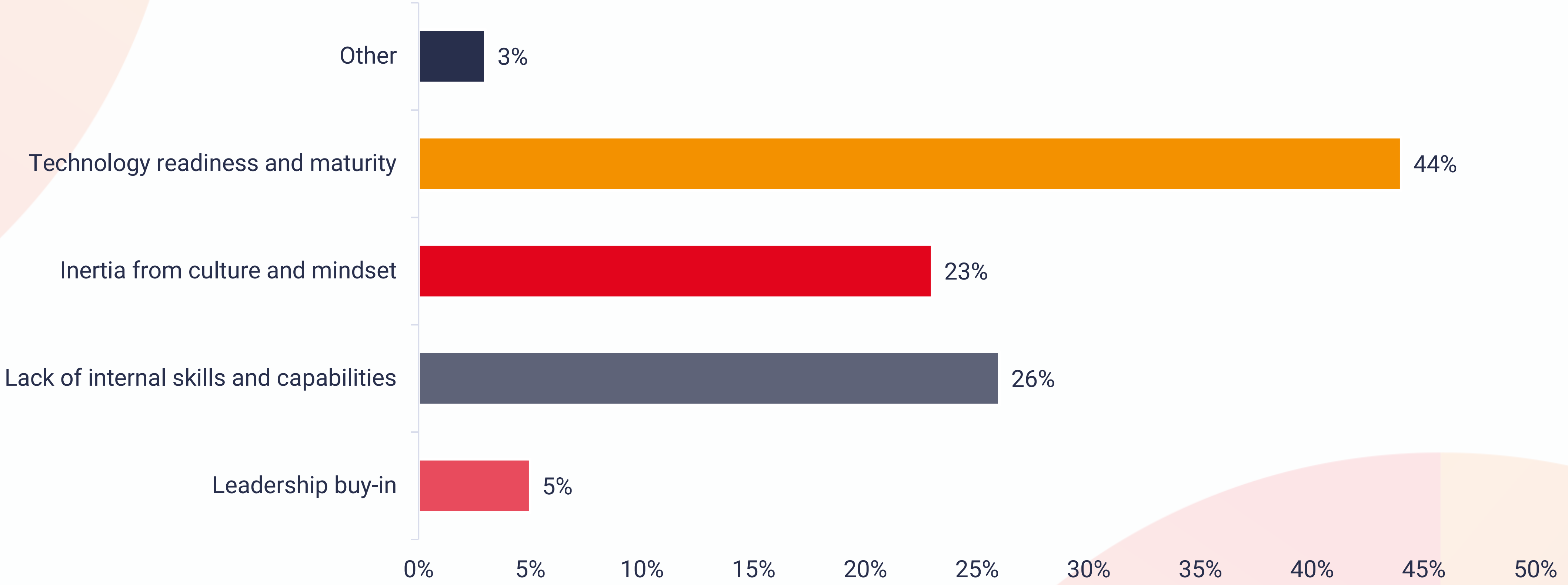
Cloud-native networking is also about embracing continuous change as the new normal, but given the challenges and efforts that have gone into the first wave of NFV in the past, many see this as the next challenge they have to tackle.

### Technology readiness and maturity

Some interviewees shared concerns about lack of maturity in solutions influencing their decision to hold off on certain domains. This risk aversion applies particularly with operators that lack the integration and engineering skills to manage a disaggregated network with multiple partners.

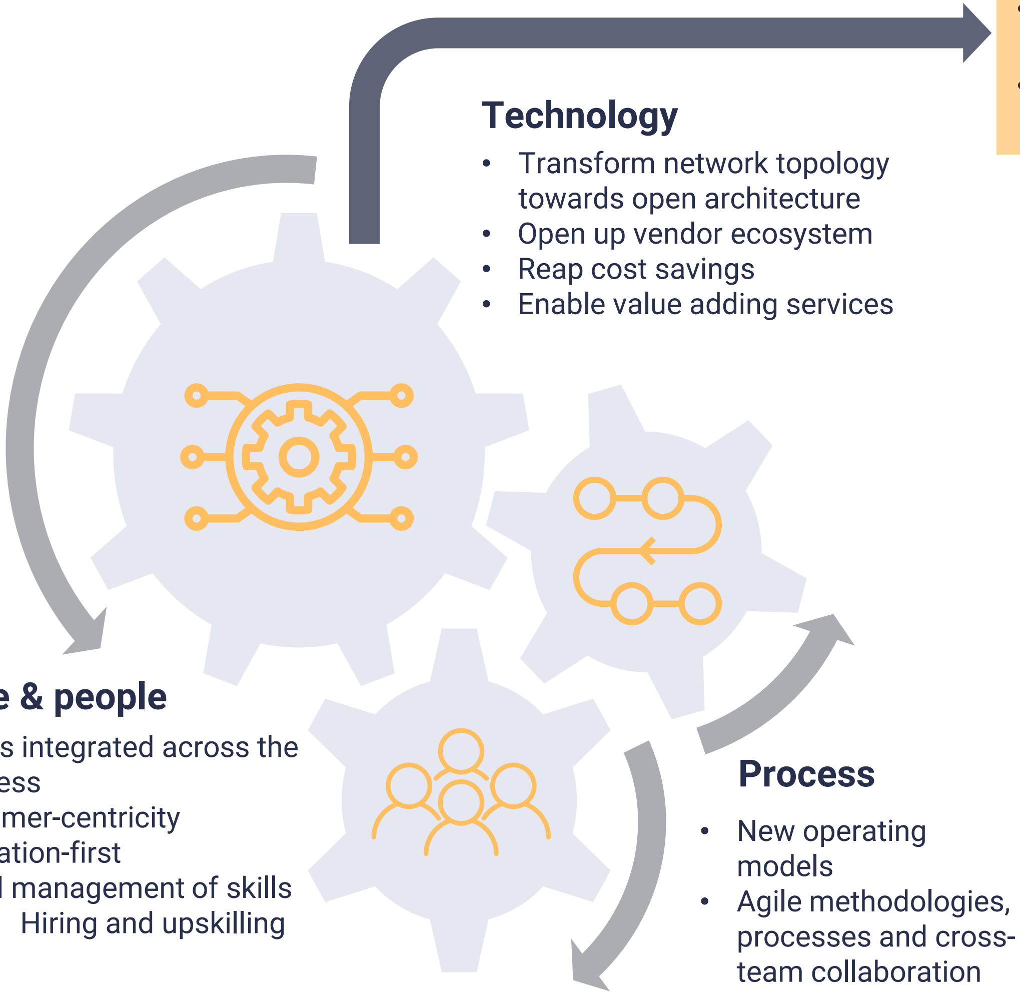
## Audience poll #3

# What is the most pervasive challenge that you are facing in driving cloud-native disaggregation initiatives?



# Leadership buy-in can either be an enabler of disaggregation or a barrier to any change

## Leadership buy-in as an enabler



**Technology**

- Transform network topology towards open architecture
- Open up vendor ecosystem
- Reap cost savings
- Enable value adding services

**Culture & people**

- Teams integrated across the business
- Customer-centricity
- Innovation-first
- Mixed management of skills
    - Hiring and upskilling

**Process**

- New operating models
- Agile methodologies, processes and cross-team collaboration
- CI/CD pipelines

**CSPs with leadership who embraced disaggregation were able to:**

- Have better means of prioritising initiatives within the organisation (i.e. mapping technology capabilities to product innovations)
- Drive greater organisational and cultural change to more agile practices, cross-team collaboration etc.

## Leadership buy-in as a barrier

**CSPs with leadership who did not embrace disaggregation:**

- Difficult to drive acceptance across organisation
- Will end up with constrained innovation given challenges in changing operating model and ways of working



**Technology**

- Pursuit of disaggregation results in asking incumbent vendors for disaggregation but operating it in a non-disaggregated way.
- This means no shift in control, visibility and operating model and no benefits on innovation.

STL PARTNERS

# Based on our research findings, we set out three key recommendations for operators

**Broaden the scope of disaggregation to include innovation on top of cost benefits**

- Sole focus on costs will not be sustainable for longer term success, given the competition, commoditisation of legacy connectivity services and wider ambition to reinvent the telco business beyond being a connectivity provider.
- Take a pragmatic approach in prioritising potential initiatives to drive disaggregation based on expected internal (cost savings) and external (innovation) outcomes

**Actively invest time in ensuring your leadership embrace the inevitability of the journey**

- To drive wider operational and organisational change, telco leadership need to be fully engaged and understand the importance and applicability of cloud-native networking
- This is key to driving from wider acceptance, buy-in and successful change across the business.

**Focus on facilitating greater cross-team learning and sharing within the organisation**

- Those that have achieved greater progress and success have enabled better learning and engagement between experienced telecoms teams and newer cloud-native developers within the same team.
- This also includes collaboration and sharing learnings across teams (moving from siloed departments to functions)

# Agenda

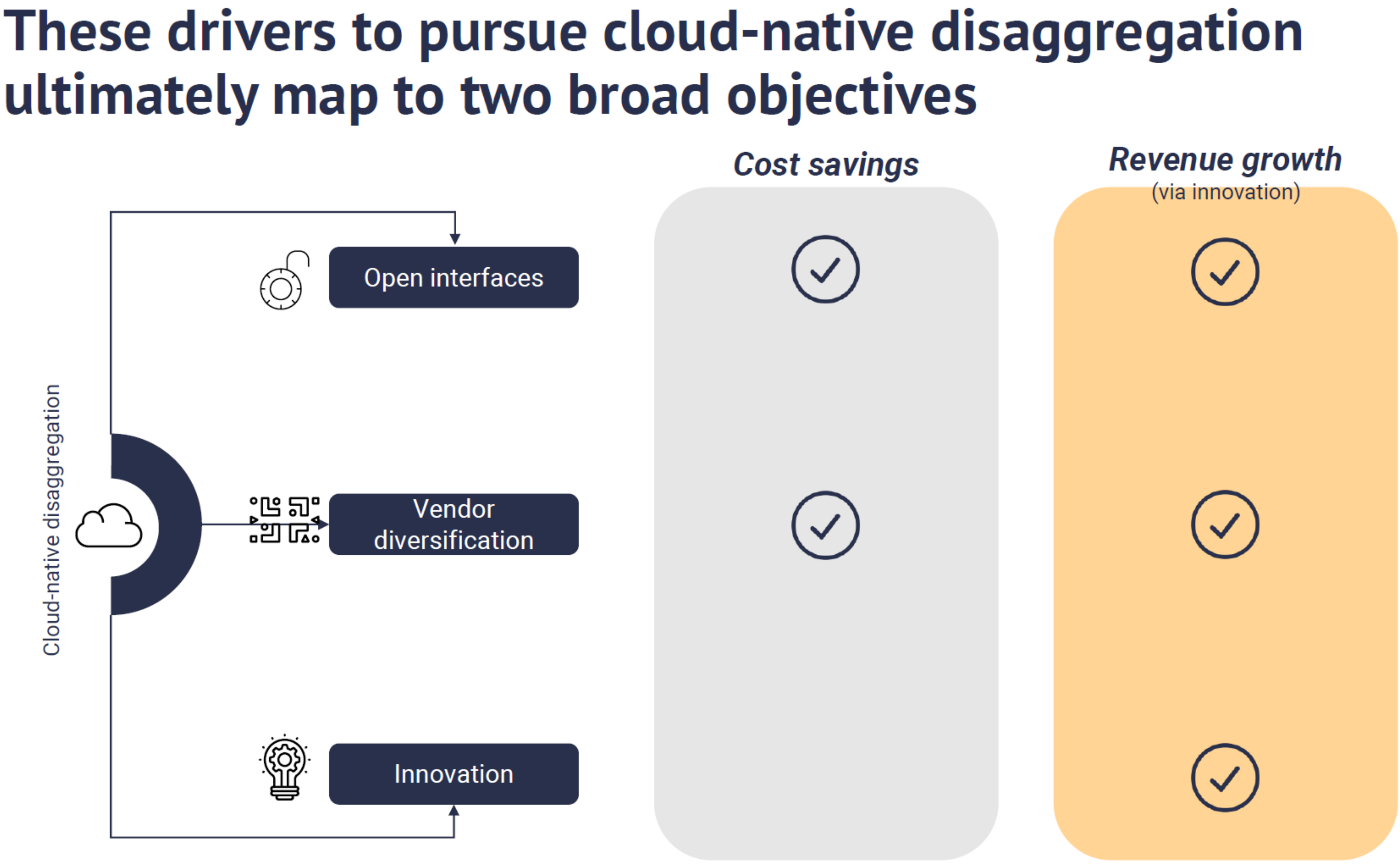
| | | |
|---|---|---|
| 1 | **Introductions** | 09:00 – 09:05 |
| 2 | **The road to cloud-native disaggregation: Do's and don'ts from lessons learned** | 09:05 – 09:25 |
| 3 | **DriveNets: Network Cloud as an innovation catalyst** | 09:25 – 09:45 |
| 4 | **Q&A session** | 09:45 – 10:00 |

# Network Cloud as a Catalyst for Innovation

**Run Almog,**
**Head of Product Strategy**
**DriveNets**

July 2022

# Why do operators seek innovation?

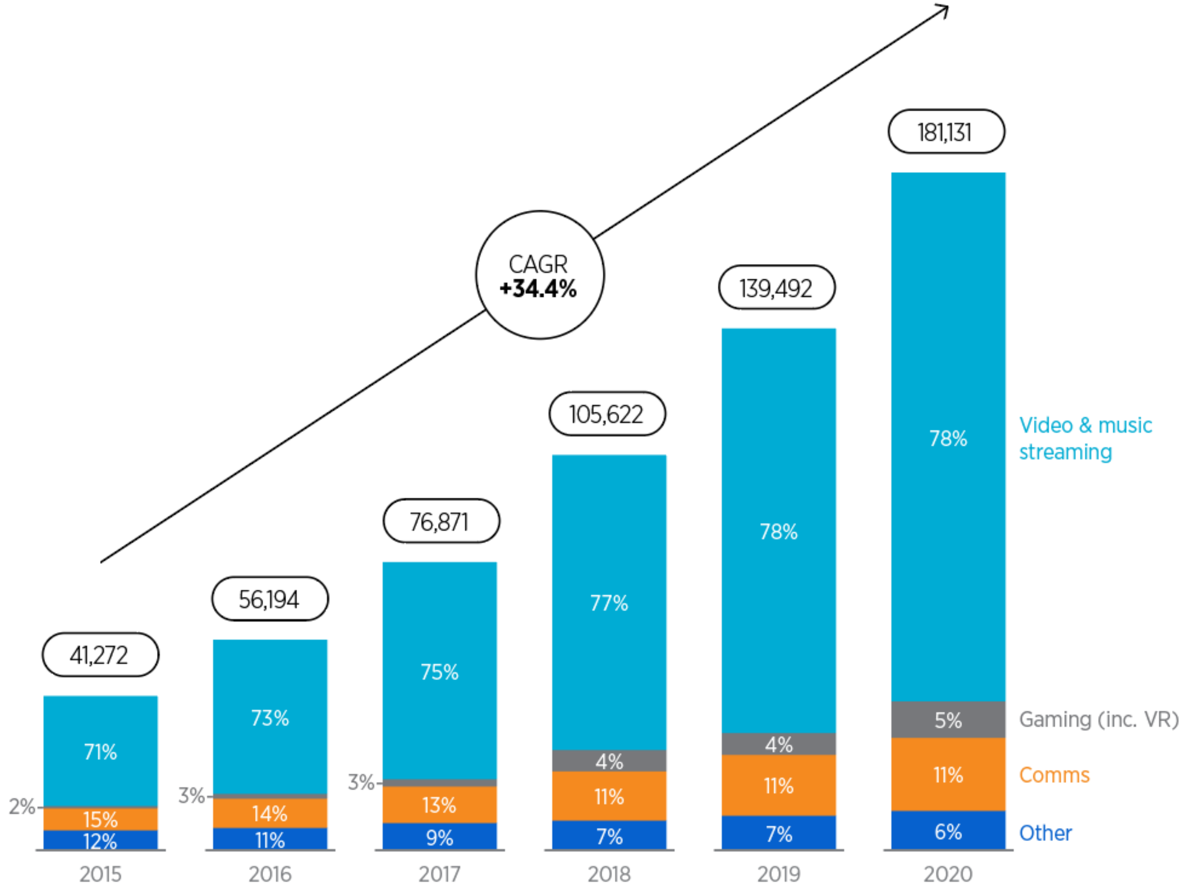




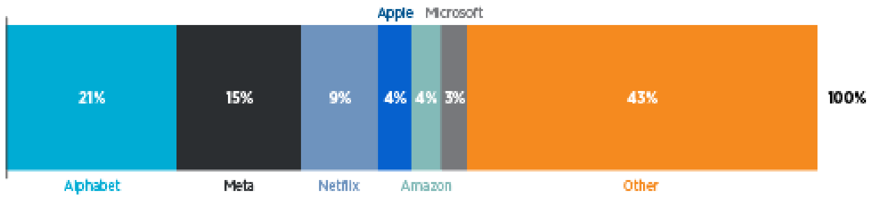

RIVENETS

# The internet value chain is changing

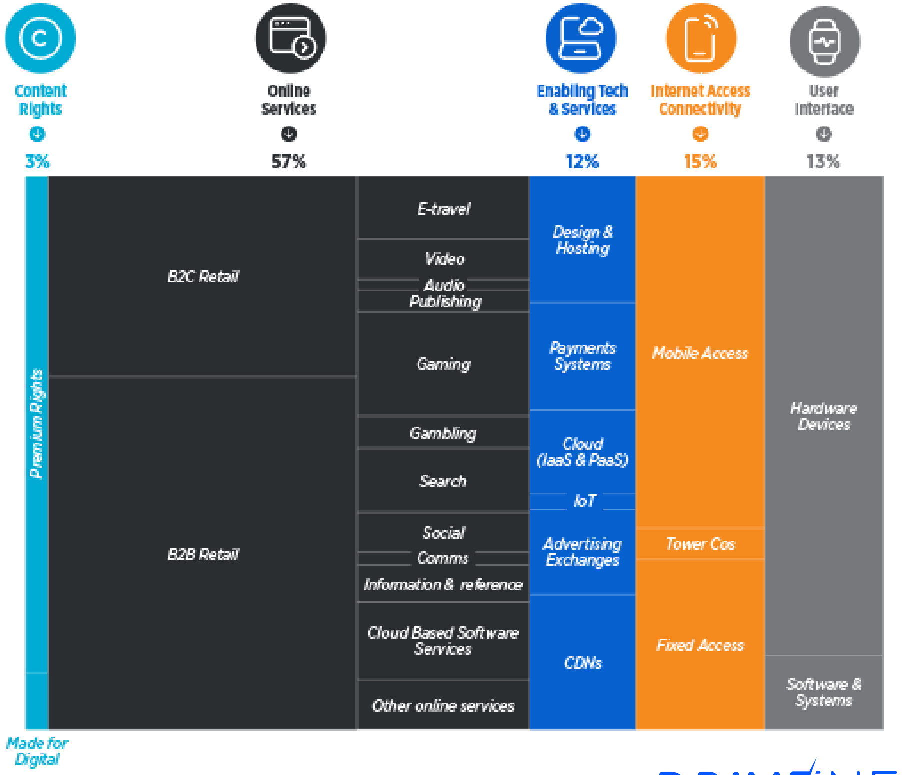
Global consumer internet traffic (average PB per month)




Global internet traffic by brand family




Internet value chain valuation 2020

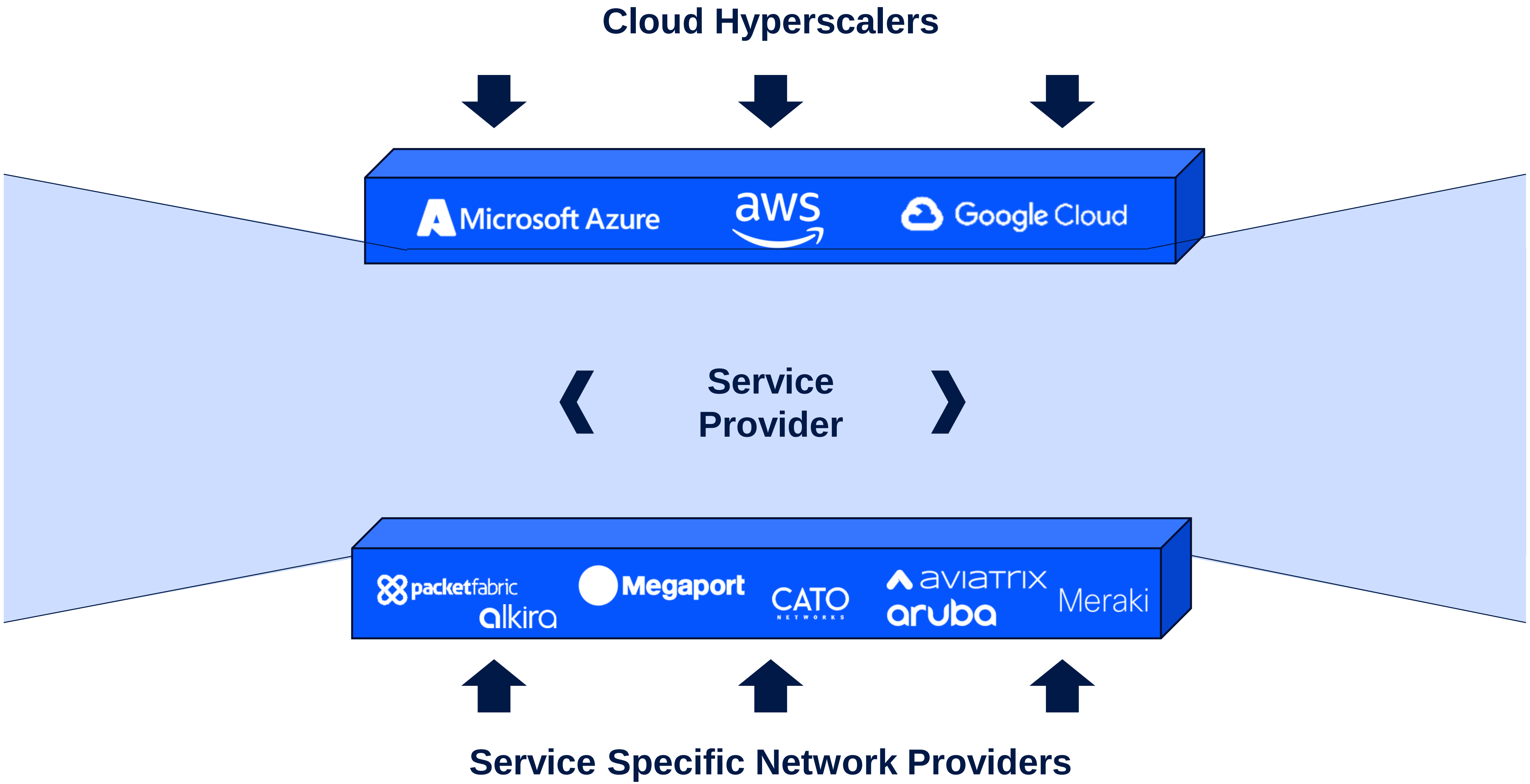





*Source: GSMA*

DRIVENETS

# Market Squeeze



# SP challenges | **Slow Time to Market**

| Vendor Selection | Certification | Deployment | Active Service | EOL |
|---|---|---|---|---|
| RFI, RFP | Lab, FFA | Network Migration | Service Turn-up | HW/SW End of Life |
| **1-2 Years** | **6-12 Months** | **1-6 months** | **Days / Weeks** | |

5-7 Years
Network Refresh Cycles

Long selection and
certification periods

Long service turn-up time
(physical install)



DRIVENETS

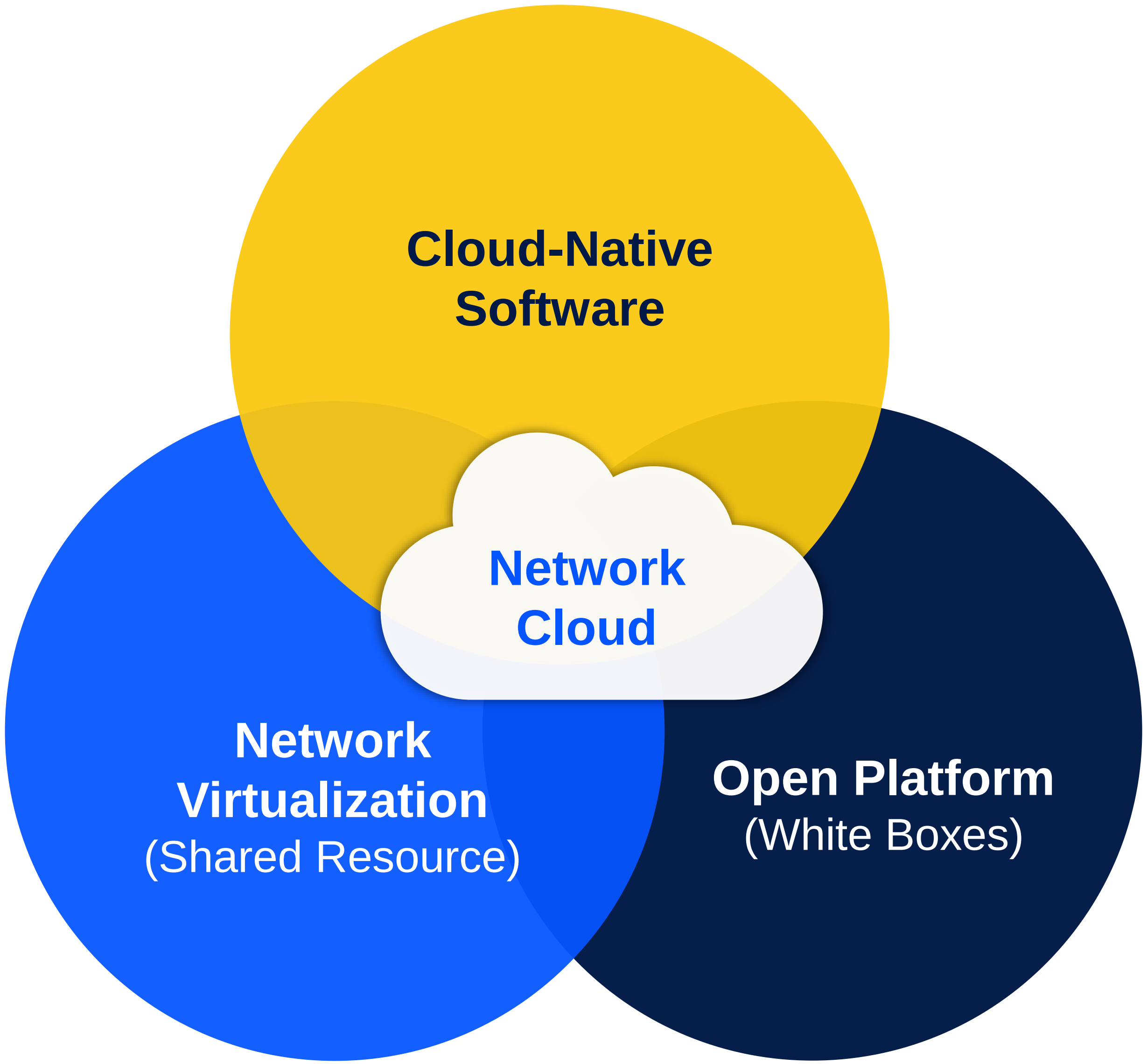
# The Cloud – **Solved Similar Challenges**

**Data Center**

**Hyperscale cloud**

Cost Saving | Scaling elasticity | Agility – innovate faster

# DriveNets Builds Networks Like Clouds



# DriveNets **Network Cloud**
# Build & Consume Networks Like Cloud

## 1

### Fast Innovation
Software-Defined Infrastructure

- Faster TTM of new services
- Edge-based use cases
- Service-aware networking

## 2

### Cloud Economics
Shared infrastructure

- Optimal Hardware Utilization
- Lower-cost hardware
- Less spares, simpler planning and procurement
- Simplified operations

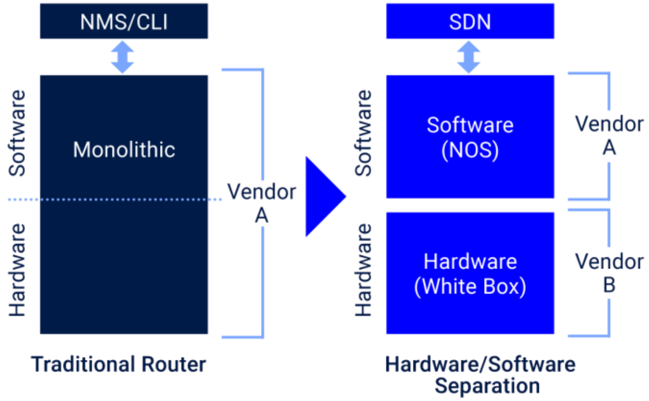
## 3

### Elastic Scale
Distributed Disaggregated Chassis

- Dynamic efficient scaling
- Scale capacity – grow the cluster: Any size distributed router
- Scale services - any service, any port

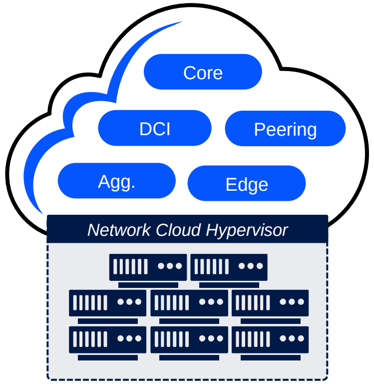
# DriveNets **Network Cloud**

## Disaggregation



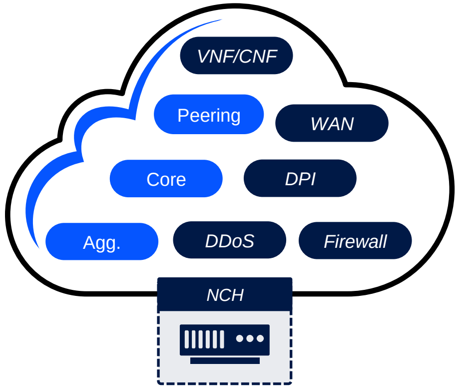

Hardware/software disaggregation

## Distribution




White box cluster abstraction into a shared pool of resources

## Containerization




Multiple Network Cloud instance containers over one infrastructure

## Orchestration

Orchestration of hardware/abstraction and services

**Lowest Cost**

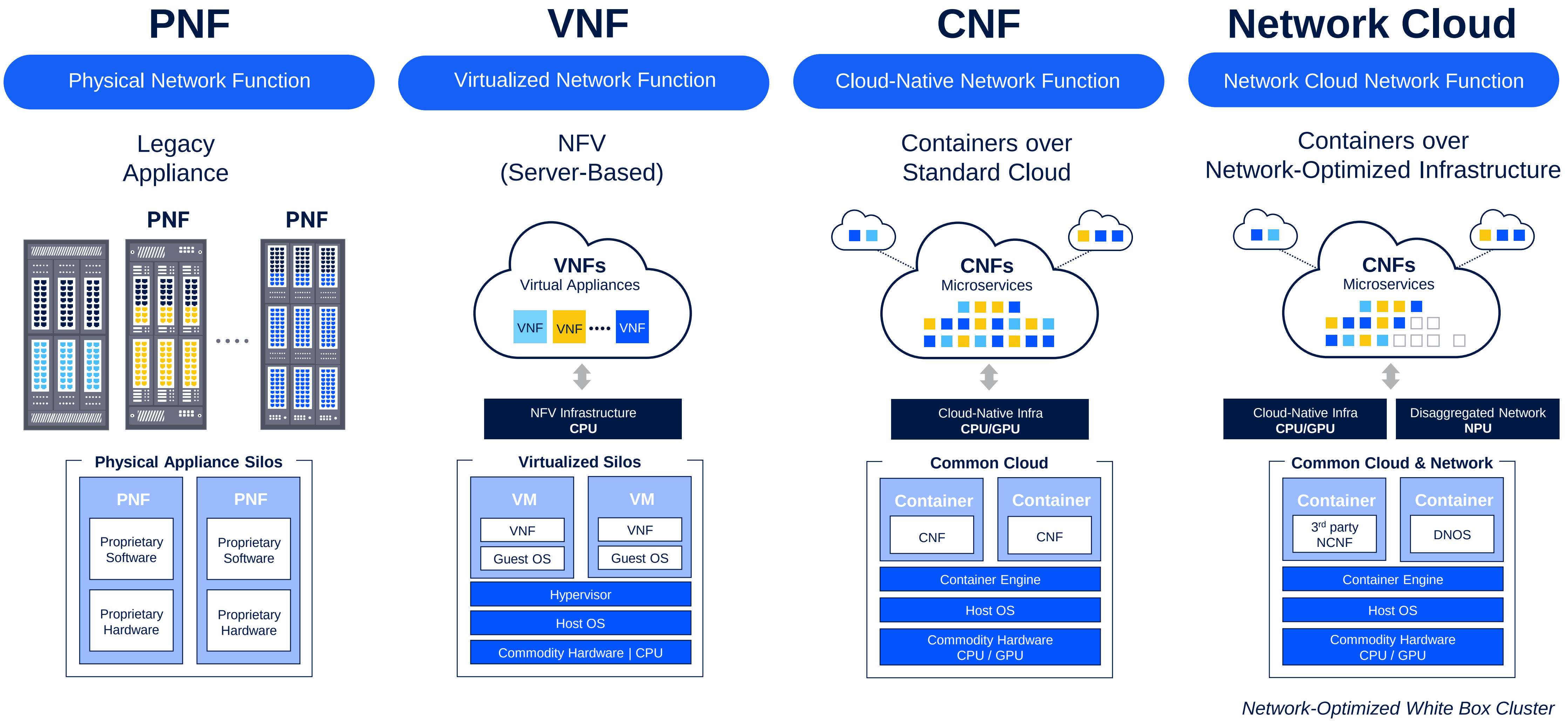
**Optimal Scaling**

**Ease of innovation**

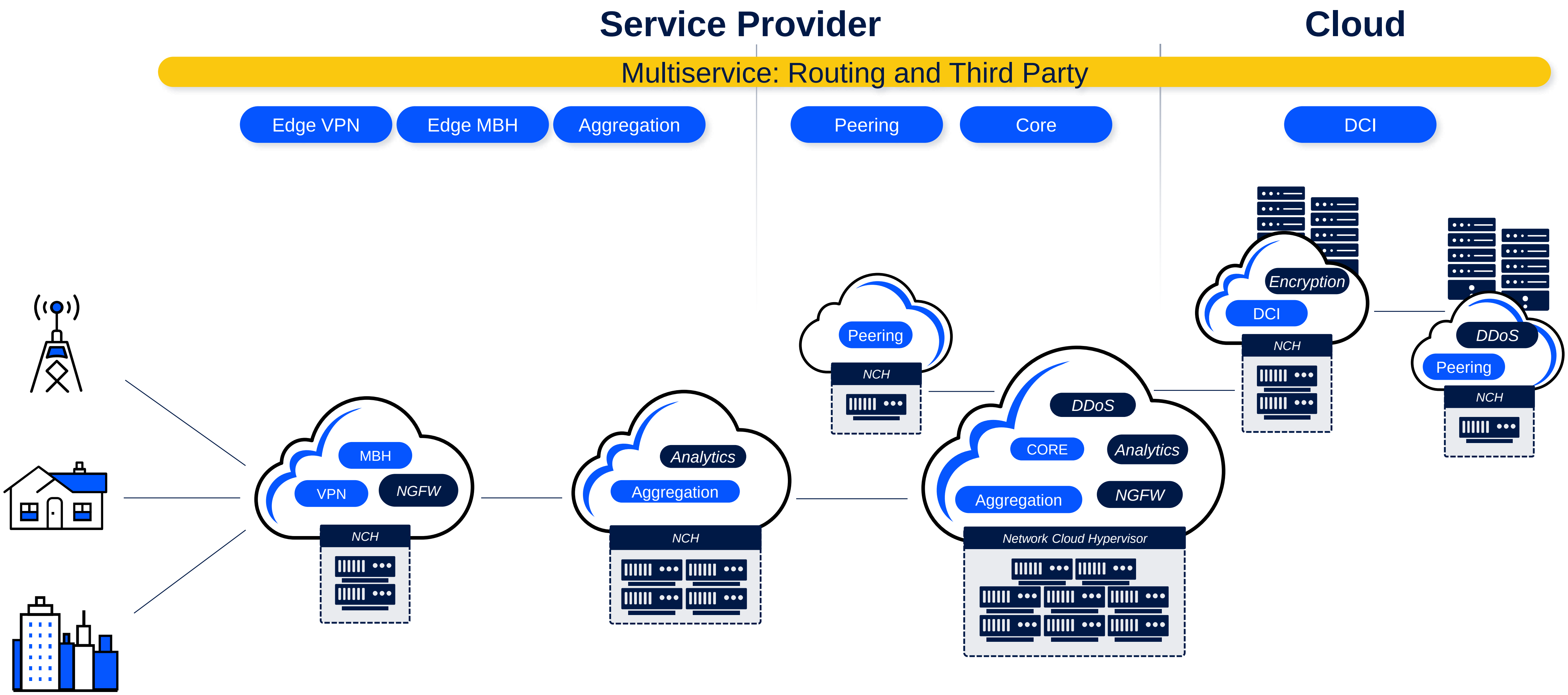


DRIVENETS

# Network Cloud Is the Optimal Cloud for Networking



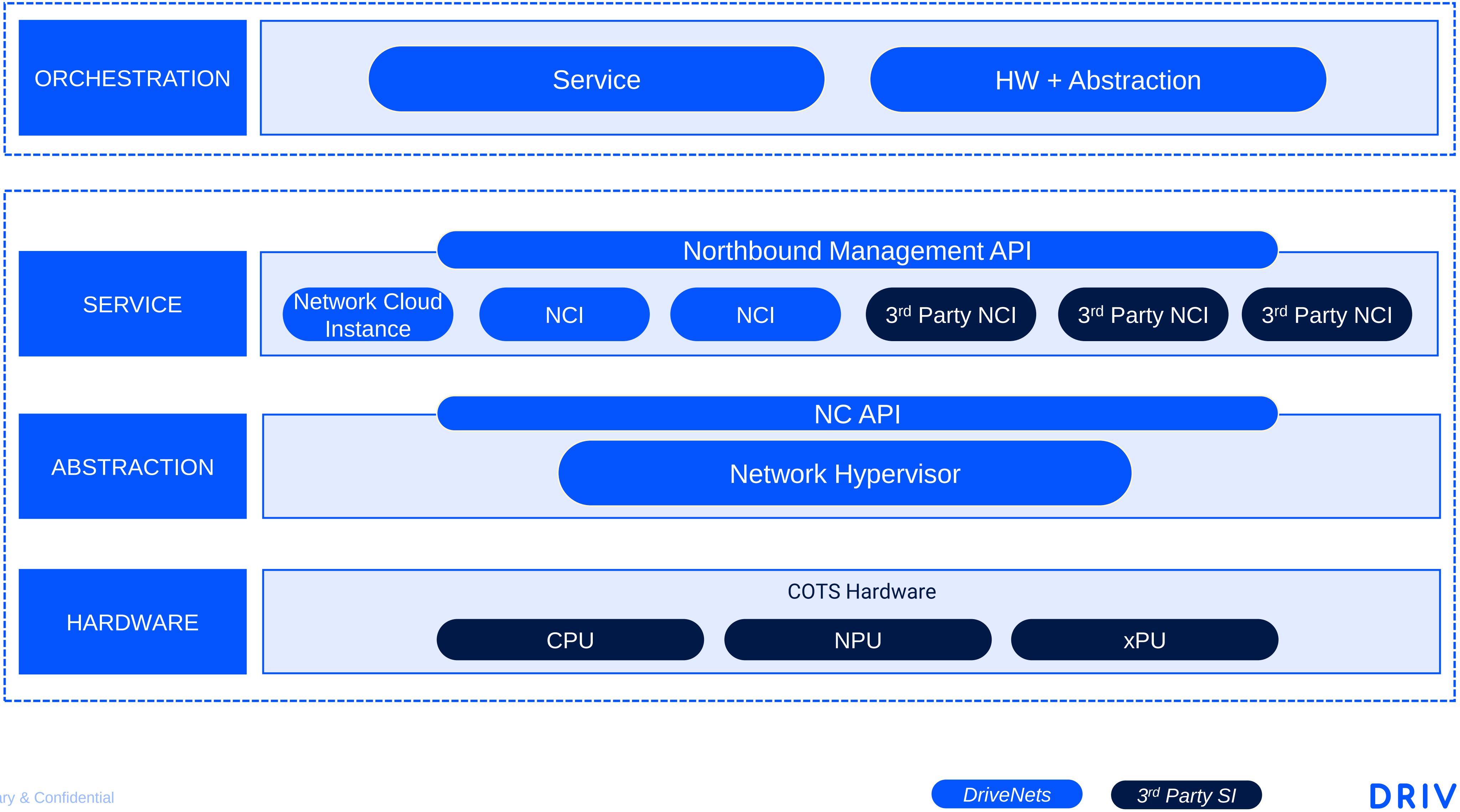
# DriveNets Network Cloud **Solutions**






DRIVENETS

# Network Cloud Architecture



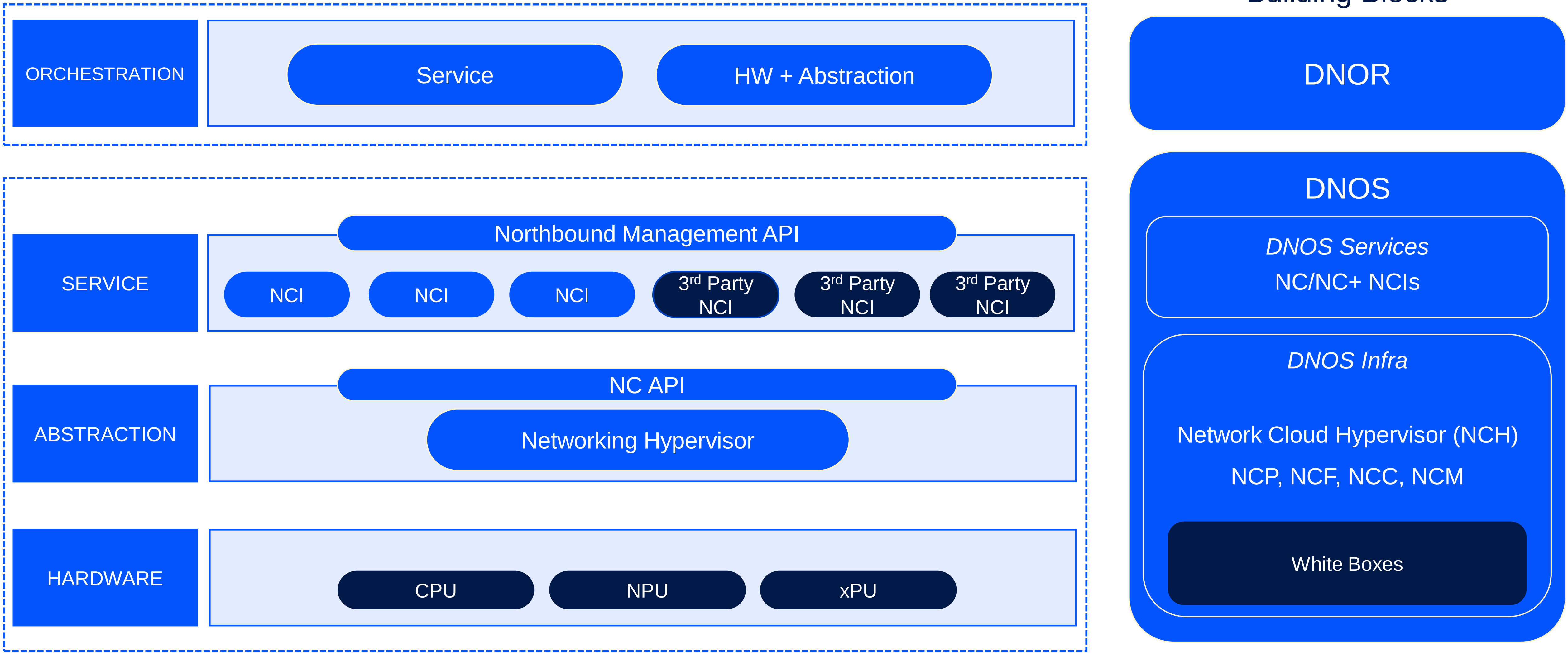



DRIVENETS

# Network Cloud Solution Building Blocks

Architecture

DriveNets Network Cloud Building Blocks




DriveNets    3rd Party SI



DRIVENETS

# **Network Cloud** vs. Monolithic Solutions

**60%**

**FASTER INSTALLATION TIME***

**40%**

**LESS INTEGRATION COSTS***

**50%**

**LESS PLANNING EFFORTS***

- Modular design for site preconditioning, adheres to any site constraints
- Common process for all sites – less training, less site revisits
- Zero-touch provisioning

- Common hardware requires less configuration validation
- Automated, script-based hardware testing and validation
- COTS optics

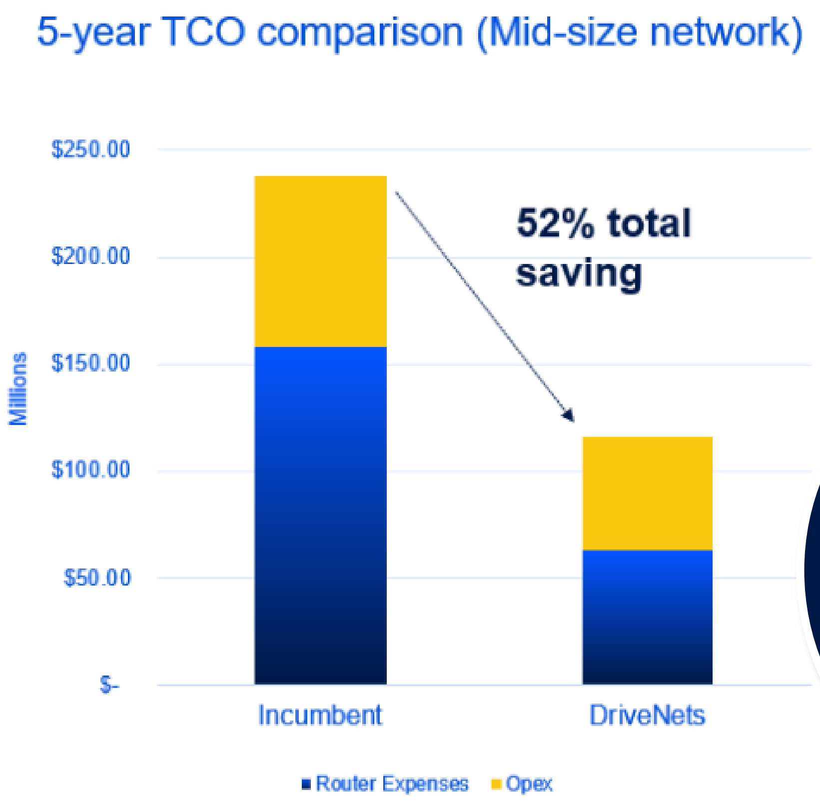
- Common architecture, modular design
- Simpler forecasting with only 6 SKUs
- Simplified stocking

** Based on KGPCo deployment experience*



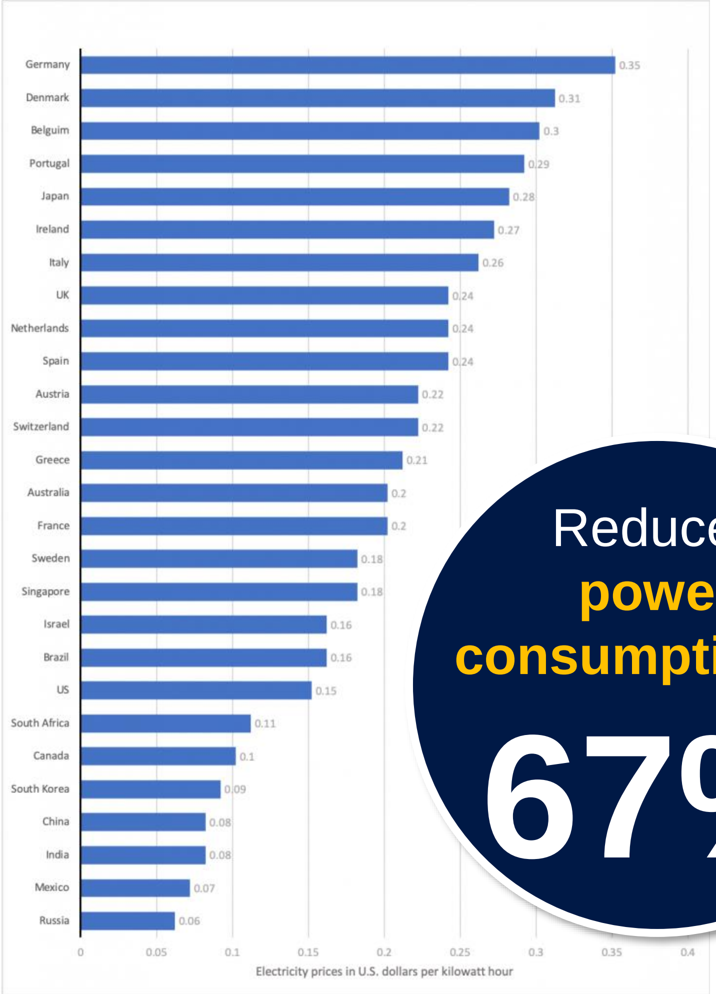
DRIVENETS

# TCO Advantages




Reduces network **# of ports** by

**47%**




Reduces **power consumption** by

**67%**

# Operators that made the journey

AT&T

KDDI

# Thank You!

DRIVENETS

# Agenda

| | | |
|---|---|---|
| 1 | **Introductions** | 09:00 – 09:05 |
| 2 | **The road to cloud-native disaggregation: Do's and don'ts from lessons learned** | 09:05 – 09:25 |
| 3 | **DriveNets: Network Cloud as an innovation catalyst** | 09:25 – 09:45 |
| 4 | **Q&A session** | 09:45 – 10:00 |

# Our presenters for today’s session

**Phil Laidler**
Managing Director, Consulting
**STL Partners**

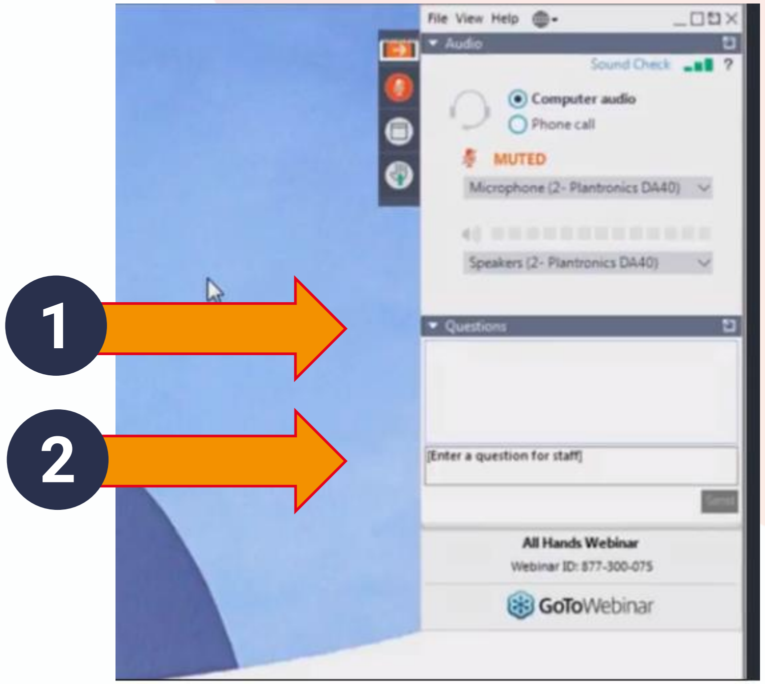
**Yesmean Luk**
Principal Consultant
**STL Partners**

**David Gordon**
Consultant
**STL Partners**

**Run Almog**
Head of Product Strategy
**DriveNets**

# Q&A session

Please submit any questions using the GoToWebinar control panel



# Thank you for joining!

All registrants will be receiving the link to the recording and slides shortly to watch back or to share with colleagues, plus a Q&A write-up in due course.

For any other questions, please contact:

- Yesmean Luk, yesmean.luk@stlpartners.com
- Run Almog, run@drivenets.com