

Unleashing innovation with 5G and edge: The role of network automation

STL Partners

12/07/2023

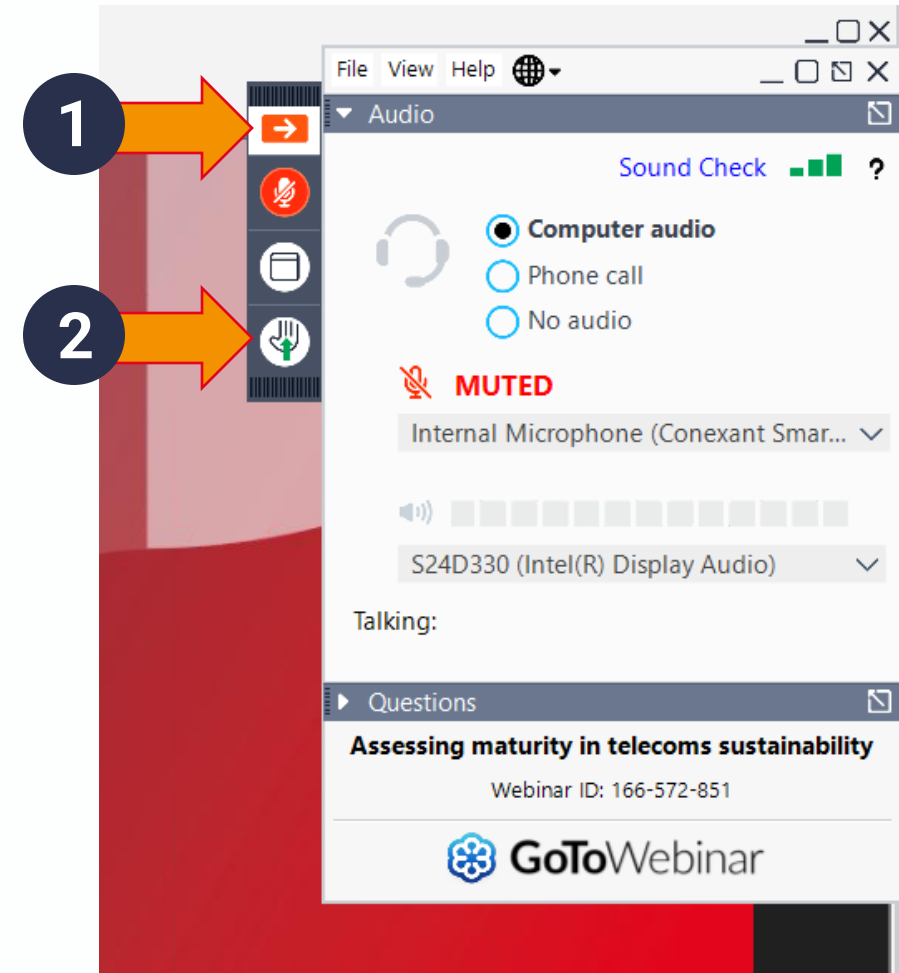


Agenda

1	Introduction and housekeeping		09:00 – 09:05
2	How does network automation fit into customer outcomes?	STL Partners	09:05 – 09:15
3	From automation to autonomous network	Red Hat	09:15 – 09:25
4	Panel discussion and Q&A		09:25 – 09:55
5	Wrap up		09:55 – 10:00

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- Feel free to type questions throughout the session for the Q&A at the end
 - Any questions that we don't answer live will be answered offline and shared in a summary Q&A document
- We'll send you the slides and a recording shortly after the session, please do share with colleagues



Our presenters and panellists

Presenters



Yesmean Luk
STL Partners



Antonis Lalazisis
STL Partners



Beatriz Ortega
Red Hat

Panellists and moderator



Chris Barraclough
STL Partners



Beth Cohen
Verizon



Saad Alqahtani
STC



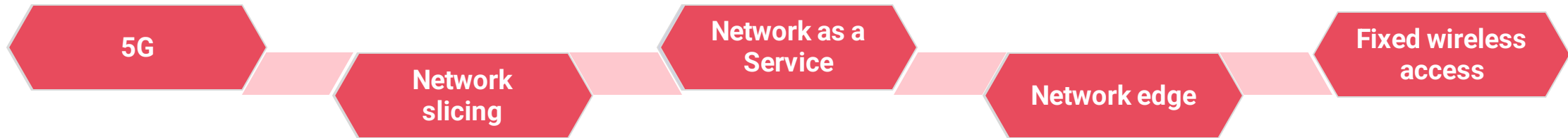
Beatriz Ortega
Red Hat

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Telcos have been talking about more flexible, dynamic networking to support and enhance customer use cases

Telcos can leverage different **dynamic network capabilities**...



....To provide reliable connectivity services and **support a variety of use cases** to grow new streams of revenue:



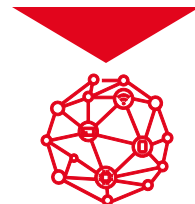
Content delivery and caching

Improves latency and ability for workloads to scale up or down to meet demand



Broadcasting services

Enhancing broadcast of games, particularly for eSports, through existing TV, OTT and mobile broadcast technologies



Cloud gaming

Hosting necessary gaming content closer to end users on telco edge infrastructure, last mile connectivity

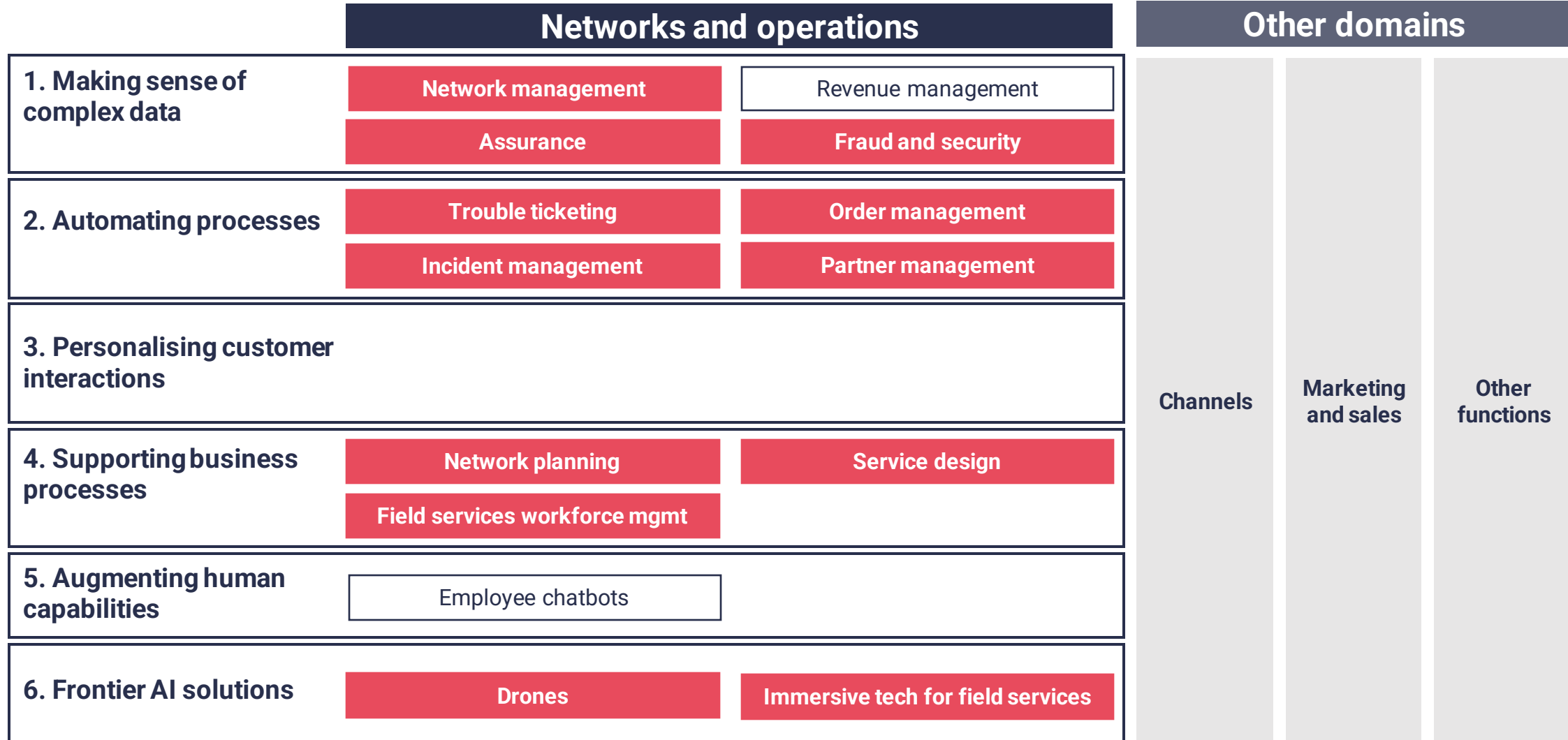


Video analytics

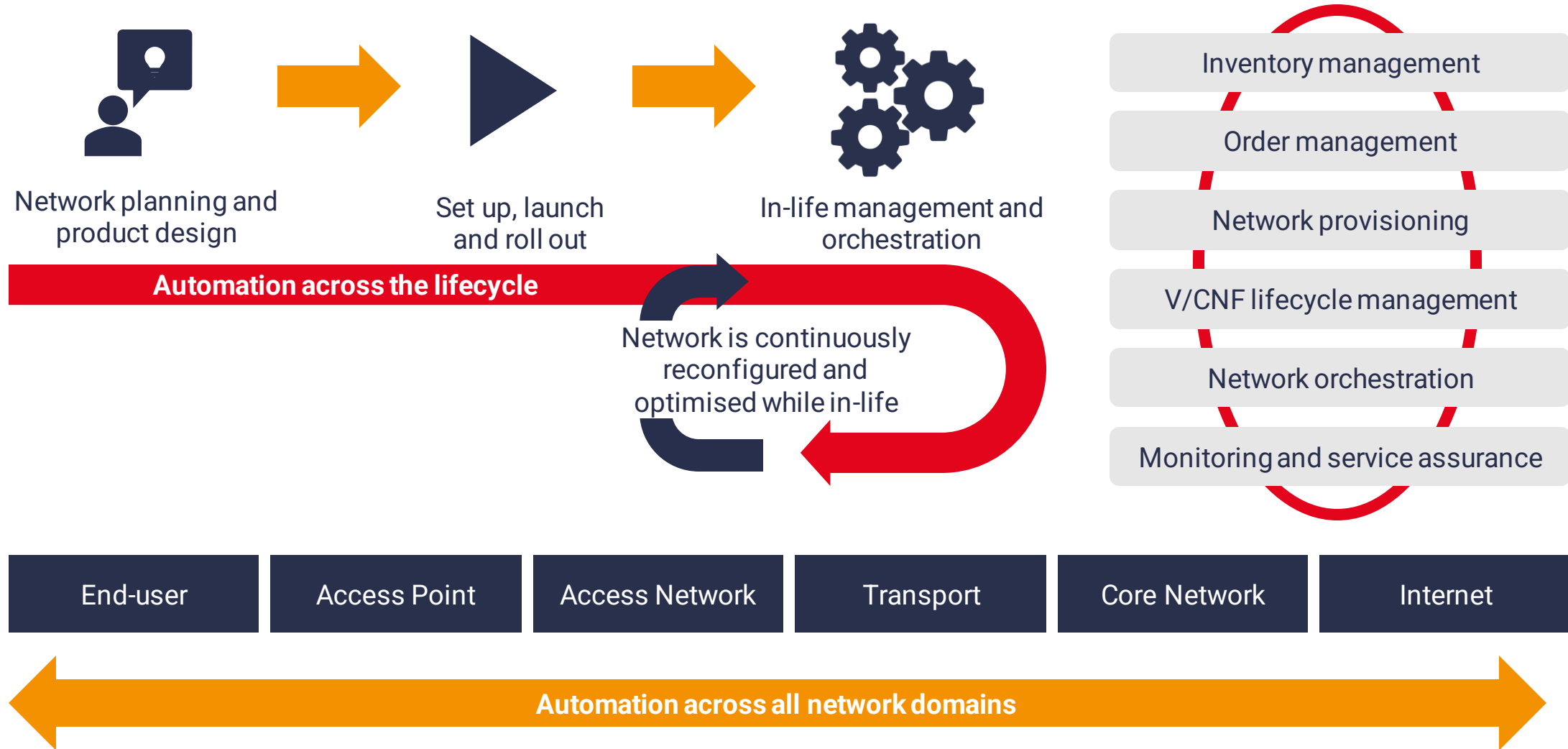
Analyses video footage in real-time in a data compliant way for use cases such as flow analysis, security etc.

Underpinning this is a network that is **dynamic, flexible** and can **respond to customer requirements** as and when needed

Automation can touch all parts of the telco organisation, but our session will hone in specifically on the network domain



Automation needs to be driven end-to-end across all parts of the network lifecycle and domains to drive innovation



We will dive into what this means with two use case and use place examples:



Cloud gaming

- **Very high connectivity demands:** A good experience highly dependent on high performance connectivity. Not all network solutions are reliably up to the task.
- **Very high compute demands:** Most compute today happens on the device or in the cloud – devices end up extremely costly and using the cloud results in lag and/or jitter.
- **Global revenue opportunity for edge computing in gaming is expected to be over USD80 billion by 2030**



Stadiums

- **Variety of different use cases,** each with different connectivity demands (e.g. latency, bandwidth, reliability)
- **Range of access technologies**
- **Fragmented ecosystem of different customer stakeholders**
- **Peaks and troughs in demand,** traffic is not consistent (even during event)

Cloud gaming requires resources to be assigned in real-time across different locations

1 Matchmaking players and set-up

- Gamers are matched based on skill level, location and wait time
- Gamers A, B and C may be in the same country but may be located in different regions



2A Hosting across a distributed edge cloud

- Servers to host games
- Closest edge node identified where workloads can be run so that 2+ players are never far from server

3 Performance monitoring and assurance

- Monitors assures network and edge services to ensure that SLAs are met
- Proactive fault detection and remediation as part of service assurance
- Can also provide network related information to gamers/publishers/developers



2B Providing reliable connectivity

- Where existing connectivity is not reliable enough...
- **Network slicing:** spin up a network slice, change the policies or spin down for their game, or set of games
- **Quality of service API:** request network requirements, which may be location or time specific

Automation plays a key role in enabling a dynamic gaming environment

Stadiums are also a great example of different network and edge requirements that need to be delivered dynamically

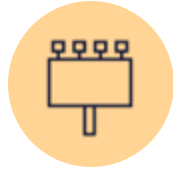
1 Understanding customer requirements



Immersive XR experiences



Live video broadcast



DOOH advertising



Security: Video ingest & analytics



Live player analysis



Flow analysis & emergency services

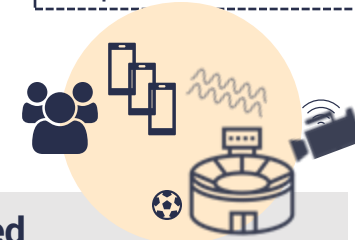


2 Planning/provisioning the network services + compute

- CSP needs to check available resources/capacity required
- It matches customer service orders to resources and assigns those resources to deliver based on the service order descriptions
- CSP spins up multiple slice instances for customer(s) and provides (network edge) compute resource at the closest network edge node available based on use case needs

3 Performance monitoring & assurance

- Throughout the game, CSP monitors and assures network and edge services to ensure that SLAs are met
- Proactive fault detection and remediation as part of service assurance



5 Decommissioning and scale down

- After the event, slices that support live video streaming and immersive XR experiences are spun down
- Slice for video analytics for security and surveillance remains active

4 Elasticity to scale up based on need

- During the event, more spectators are using the immersive XR streaming service than expected
- Real-time dynamic inventory shows what resources are available
- Associated slice to expand in real-time to support higher traffic demands through self-configuration of network elements



Before event



During event



After event

Doing this at scale beyond a single use place can only be possible through greater automation

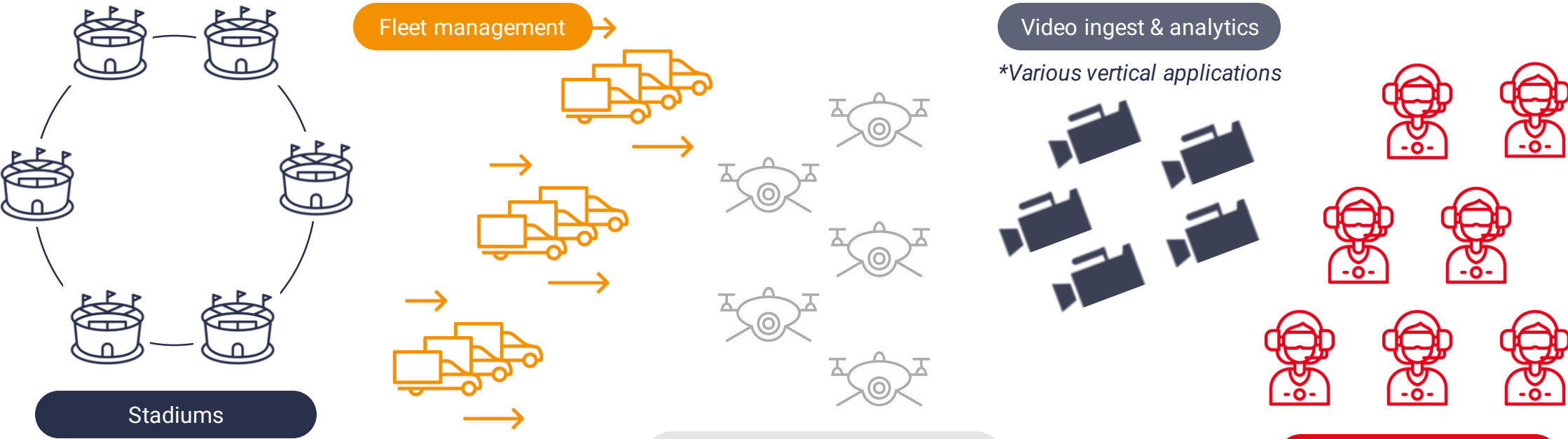
Delivering multiple use cases in a single 'use place' dynamically is challenging, but delivering dozens of use places in a reliable, resilient manner can only be done through network and service automation

Across different access technologies

Across different types of edges

Across heterogenous customer requirements

Example use cases and verticals:



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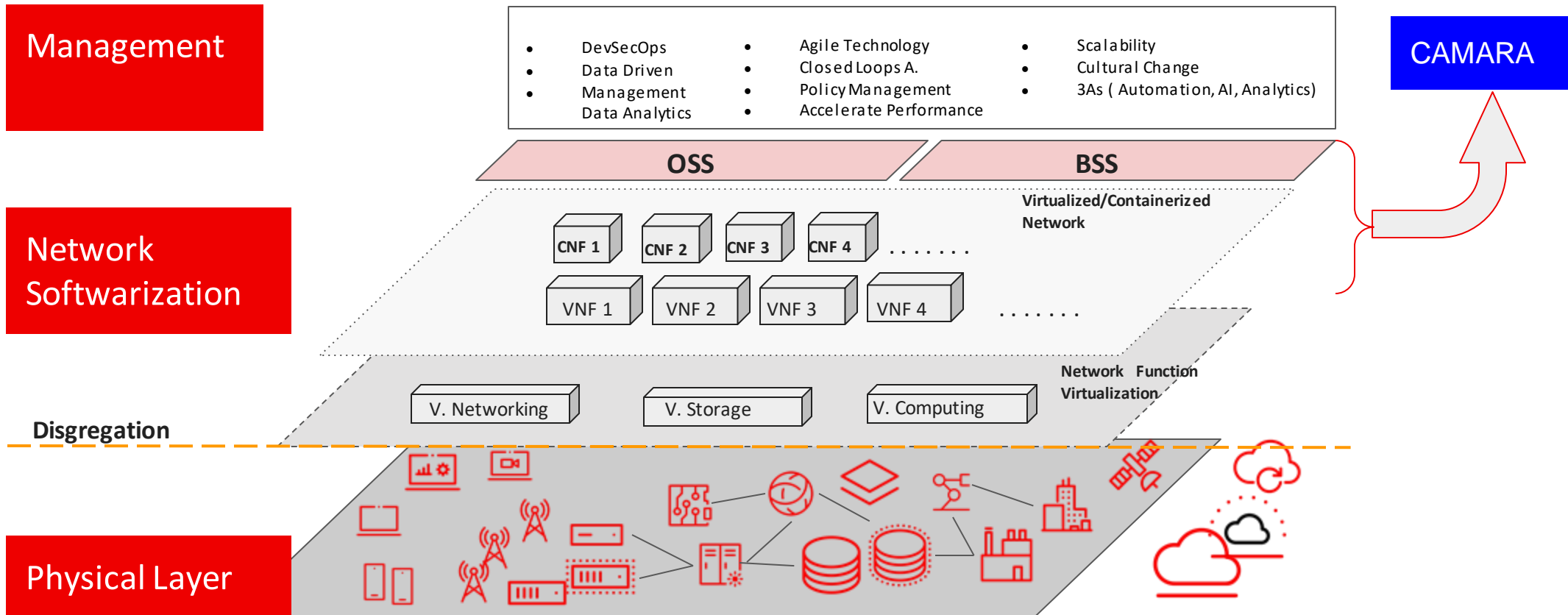
From Automation to Autonomous Network



Beatriz Ortega
Business Development
EMEA Telco Media Entertainment

Autonomous Network : Unlocking Digital Transformation

Automatic + Aware + Adaptive



Goals: Avoid Locking, leverage the potential of new open technologies, Network aware agile with autonomous lifecycle , be ready for new services and reduce TCO

AUTOMATION un step beyond the core of the Network



Autonomous Network Path according to TM Forum framework

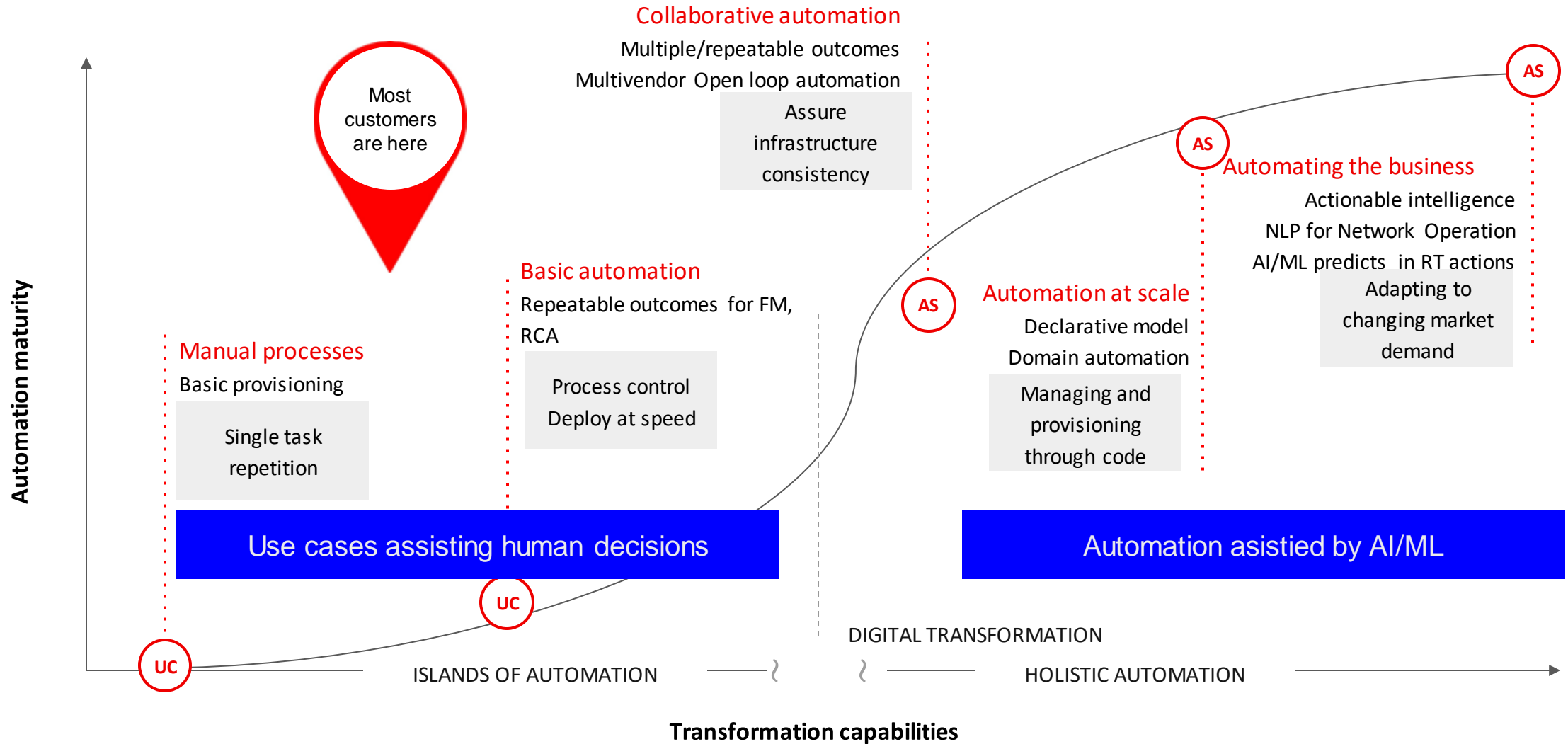
Automation and AI capabilities combined

Autonomous Levels	L0: Manual operation & maintenance	L1: Assisted operation & maintenance	L2: Partial Autonomous Networks	L3: Conditional Autonomous Networks	L4: High Autonomous Networks	L5: Full Autonomous Networks
AN services (Zero X)	N/A	Individual AN case	Individual AN case	Select AN cases	Select AN services	Any AN services
Execution	P	P/S	S	S	S	S
Awareness	P	P	P/S	S	S	S
Analysis/ Decision	P	P	P	P/S	S	S
Intent/ Experience	P	P	P	P	P/S	S

■ Personnel (manual)

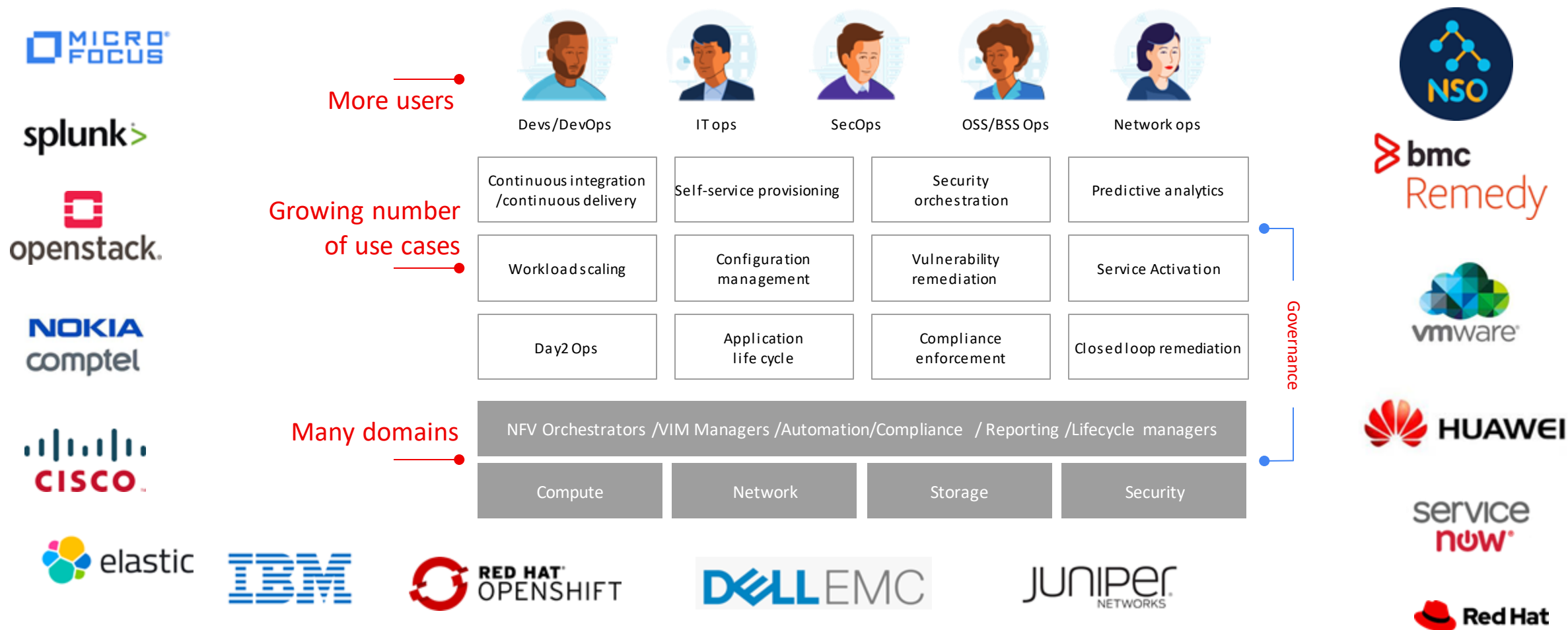
■ Systems (autonomous)

Transforming from task to business automation



Telco has invested in many technologies to meet its operational needs

Operational Challenge: Too many unintegrated, domain-specific tools



Bringing the **Universal Language** of Integration! Powered by Open-source



Cross-Technologies

Automation
Platform

Cross-Teams



What is preventing or delaying Success?

6 Common considerations to take into account

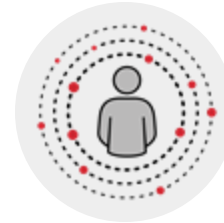
Not **fully** understanding
the **processes** being
automated



Only automating **basic tasks**
and implementing automation
as an **afterthought**



Not involving **services** or
investing in **training**



Deploying a product that
isn't **holistic**

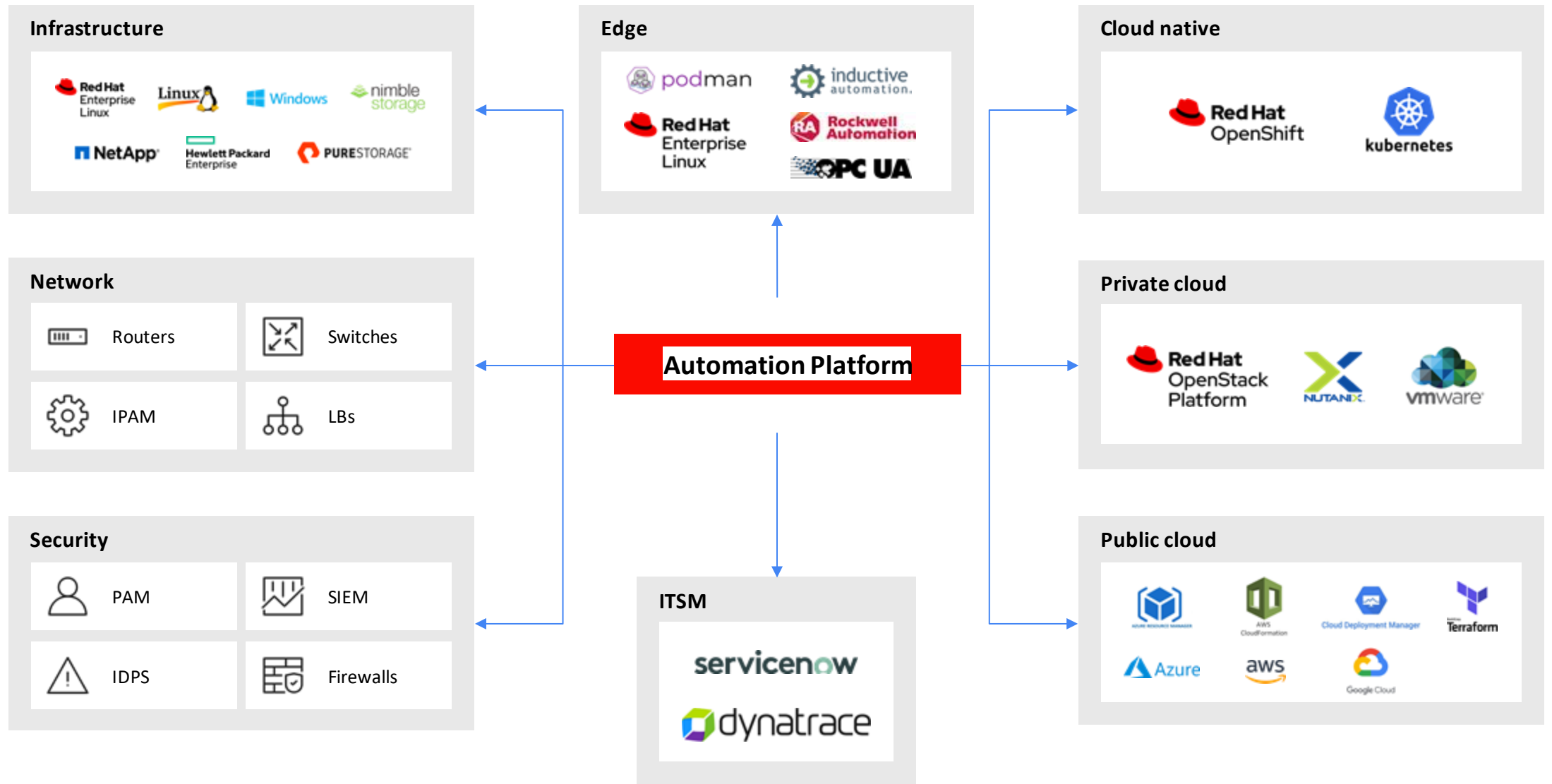


Creating **islands of automation** that don't
share success or best
practices



Incomplete planning and
prioritizing

Automation E2E, Top Down, Button Up



Thank you

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Audience poll:

Which network area are you currently prioritising within your organisation to drive greater automation?

1. *(Real-time, dynamic)* Inventory management
2. Network provisioning
3. V/CNF lifecycle management
4. Network orchestration
5. Service assurance and monitoring
6. Other

Our panel discussion

Moderator



Chris Barraclough

Partner and Managing
Director

STL Partners

Panellists



Beatriz Ortega

EMEA Telco Business
Development Manager

Red Hat



Beth Cohen

Advanced Networking
Product Strategist

Verizon



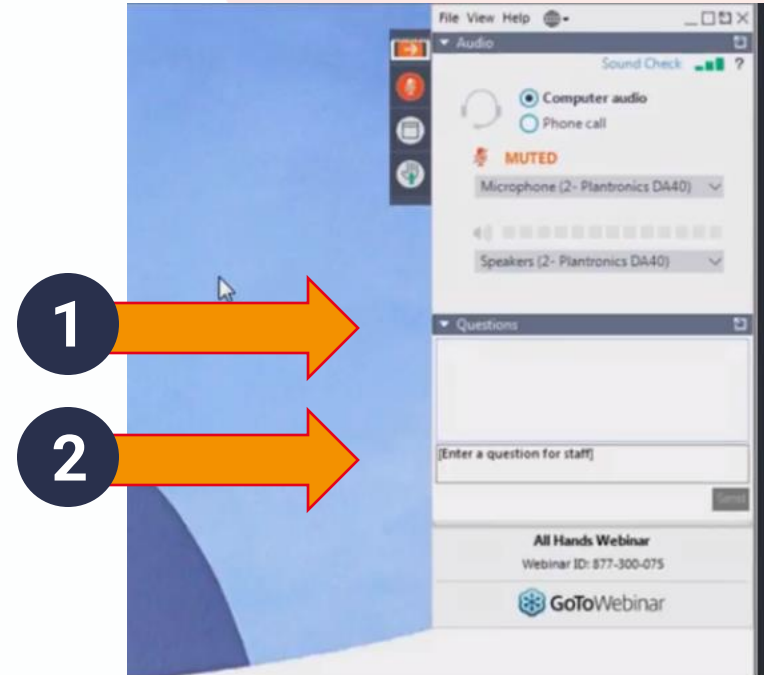
Saad Alqahtani

Director, Core Network Design

STC

For our Q&A...

Please submit any questions using the GoToWebinar control panel



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Thank you for joining!

Please visit our website for more

www.stlpartners.com

For any further questions, please reach out to:

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