

Prioritising Purpose Driven Networks

Ane-Marte Nordseth Weng

Senior Director

Capgemini Invest

MWC24

Elisabeth Py

VP, Green & Radio Networks

Orange

Prioritising Purpose Driven Networks with

Sustainable virtual networks and Energy Management Information System

MWC'24

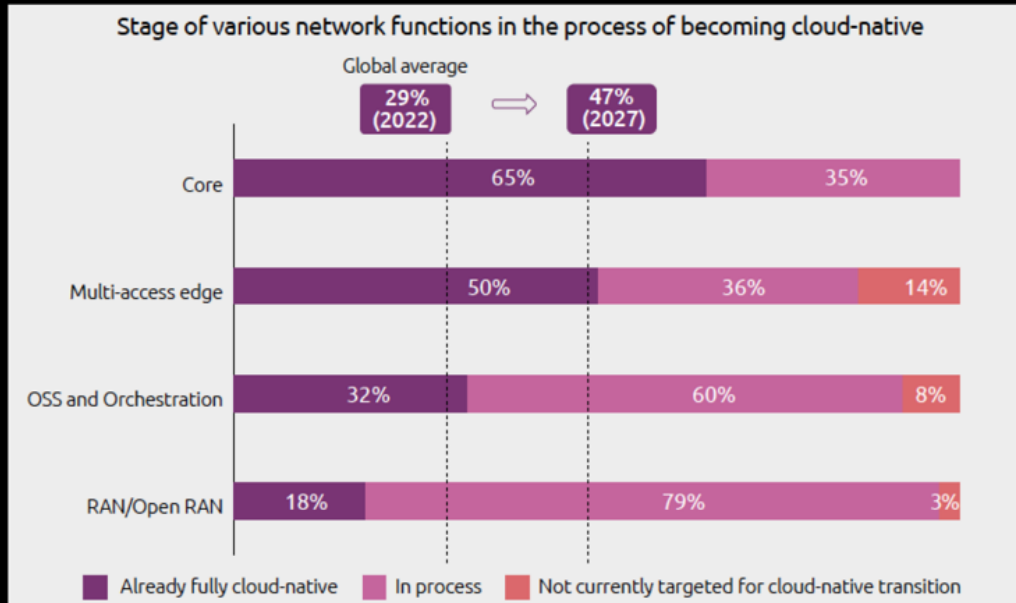
Elisabeth Py – VP Green & Radio Networks



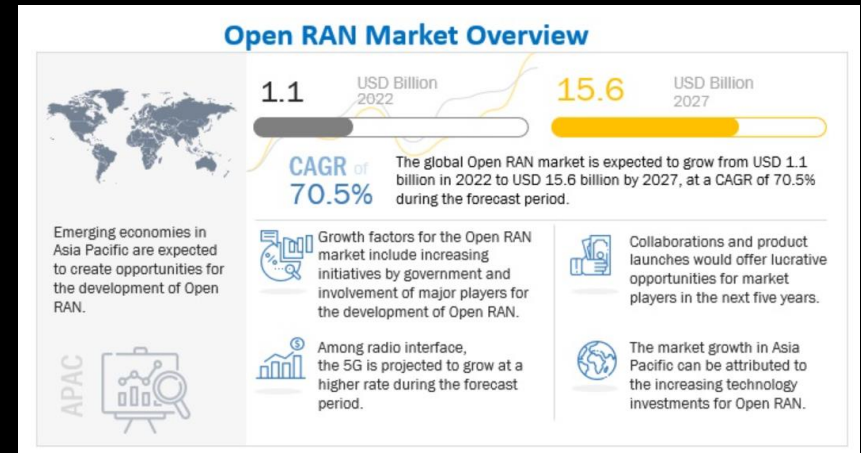
Sustainable virtual networks



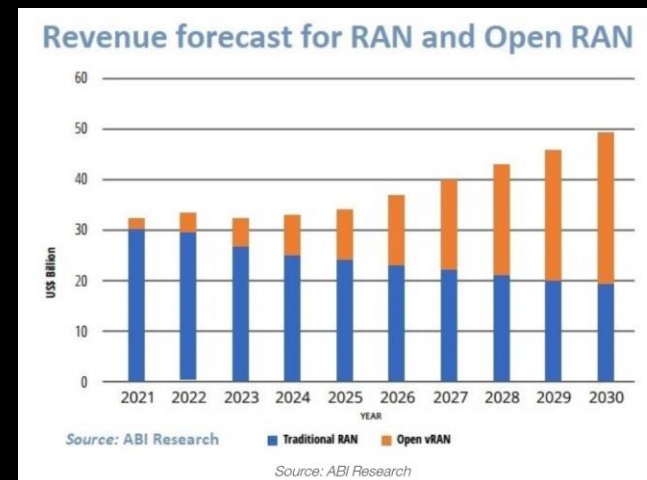
Telco Cloud is there and will impact all network segments, including RAN



<https://prod.ucwe.capgemini.com/wp-content/uploads/2023/02/Final-Web-Version-Cloudification-of-Networks.pdf>



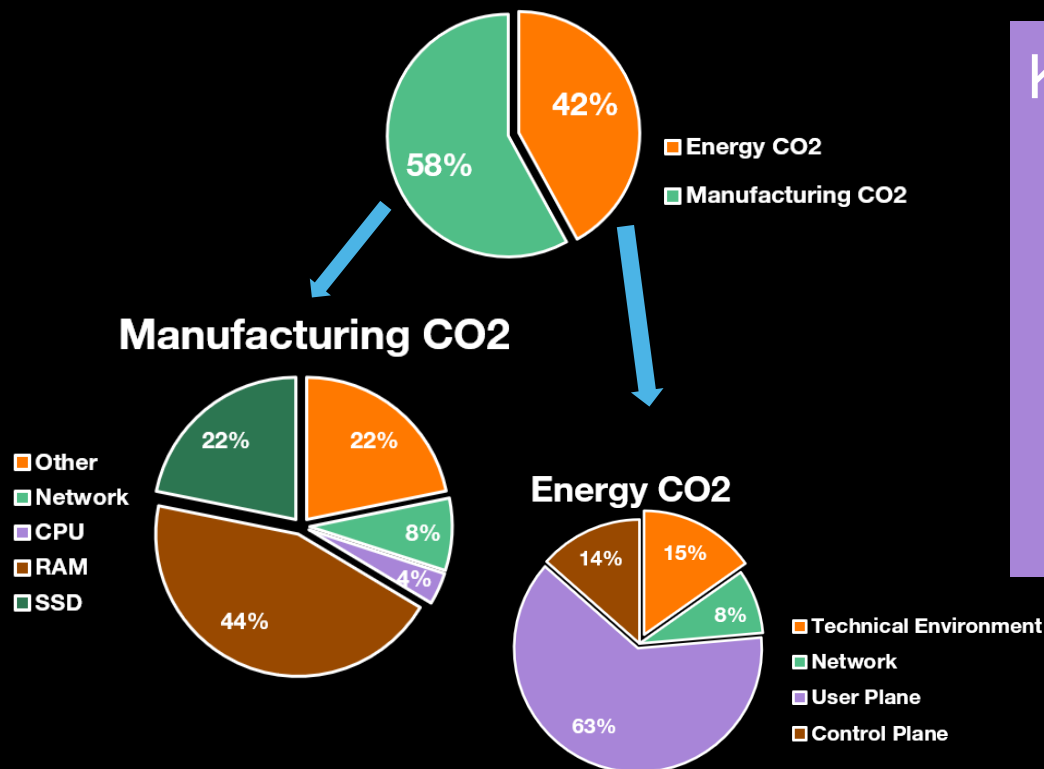
<https://www.marketsandmarkets.com/>




Orange monitor power consumption and CO2 emissions of its Telco Cloud



Orange Telco Cloud Emissions



Key levers for Green Telco Cloud

No Over Sizing	Optimize Storage designs
Increase Lifetime of equipments	Accelerate move to CaaS 
Increase Sharing of servers	Manage C-State/P-State dynamically
Reduce Manufacturing Emission Factors	Deploy Immersion Cooling

Telco Cloud can reduce significantly environmental impact through mutualization

Legacy Network

Dedicated Process



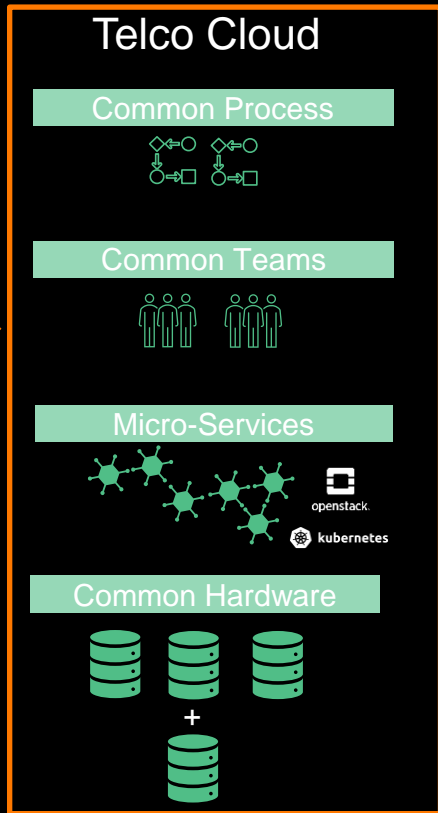
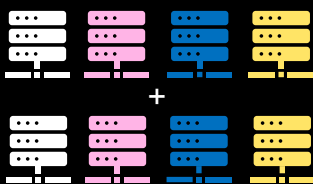
Dedicated Teams



Monolithic Softwares



Dedicated Hardware



Every cloud has a SYLVA lining.
A fundamental step to Telco Cloud & Edge homogenization and sustainability.
<https://sylvaproject.org/>

Single Private Cloud

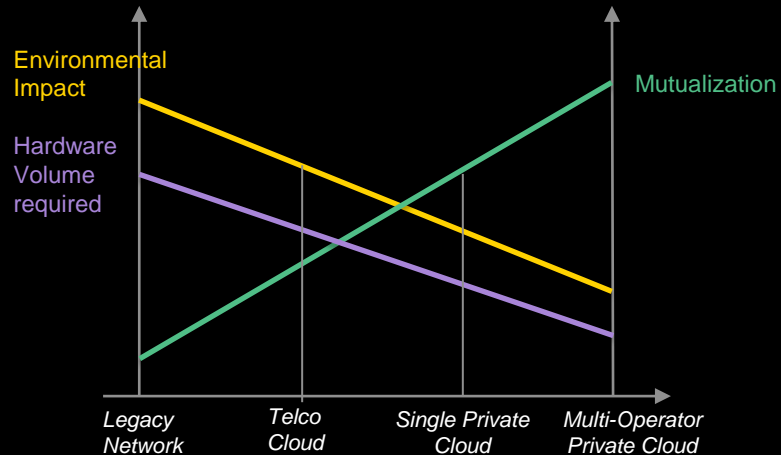


Mix IT, IS and Network
Orange Workload on a
single private cloud



Multi-Operator Private Cloud

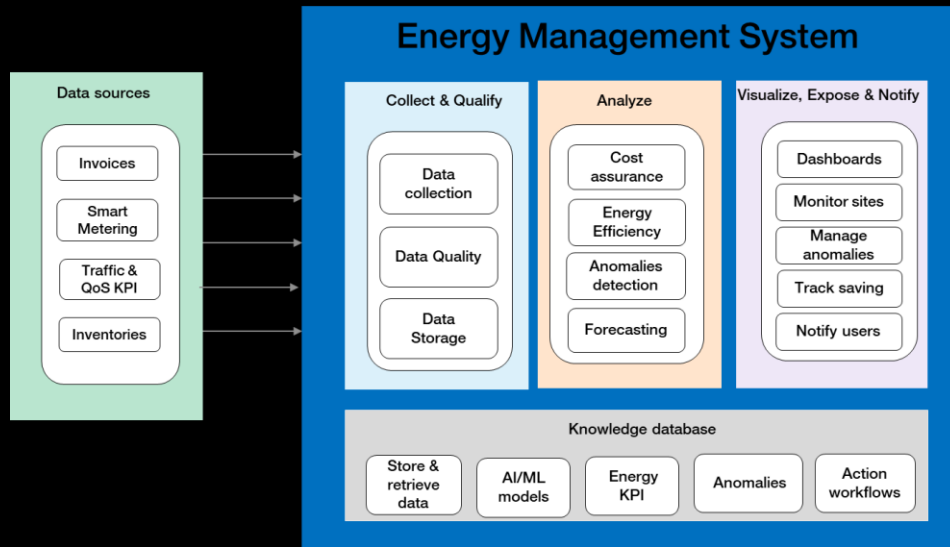
Mix Workloads of
multiple operators on
a common distributed
Private Cloud



Energy Management Information System



Streamlining Energy Efficiency in Orange's Networks thanks to energy data collection



Cost Reduction: Significant savings on energy expenses through intelligent analytics and automated control systems.

Sustainability: Supports corporate environmental goals by reducing carbon footprint.

Operational Excellence: Enhances network reliability and uptime through proactive energy management.

Why using networks' energy data and deploying an Energy Management Information System with AI/ML is key for Orange ?

→ Provide Orange countries with a solution to collect and manage energy related data to optimize energy consumption and OpEx

Motivations

- **Monitor and supervise energy and CO₂** - one of our main targets in Lead the Future strategic plan
- **Scale up our energy management** leveraging on the last decade important increase of available energy monitoring systems that are not fully exploited for networks energy supervision
- **Automate and ensure reliability** of energy reporting thanks to monitoring systems in line with an ongoing metering sourcing
- **Reduce energy costs** in the current context where volatile electricity prices & limited energy

Opportunities

- **Mutualize expertise on the solution and use cases** between countries
- Deploy green **AI-based levers** & track savings
- Benefit from **good ROI** due to high energy costs

Value

Big Data/AI features are evaluated at 10%-15% of savings of the Energy Opex*

- **Automate** reporting of energy/CO2 data
 - Automate data consolidation
 - Automate energy forecasting
 - Facilitate benchmarking
- **Reduce energy cost**
 - Invoice verification
 - Energy contract optimization
 - Energy theft detection
- **Reduce energy consumption**
 - RAN over capacity detection
 - Detection equipment consumption anomalies
- **Innovate**, Anticipate, find new levers
- **Meet** regulatory requirements

*source: <https://www.tmforum.org/catalysts/projects/M23.0.584/green-and-efficient-radio-access-networks>

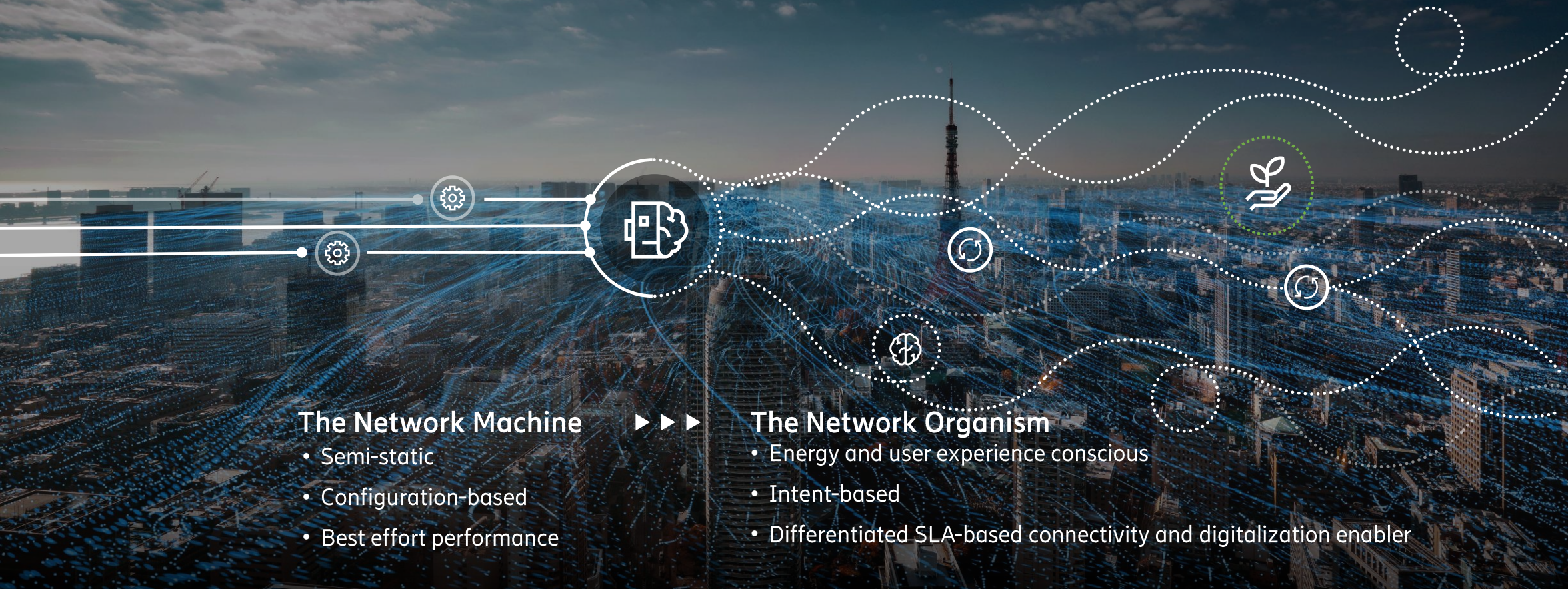
MWC24

Sibel Tombaz

Head of PL Cloud & Purpose-Built 5G RAN

Ericsson

Networks of the Future: Purpose-Driven, high-performing programmable networks



The Network Machine

- Semi-static
- Configuration-based
- Best effort performance



The Network Organism

- Energy and user experience conscious
- Intent-based
- Differentiated SLA-based connectivity and digitalization enabler



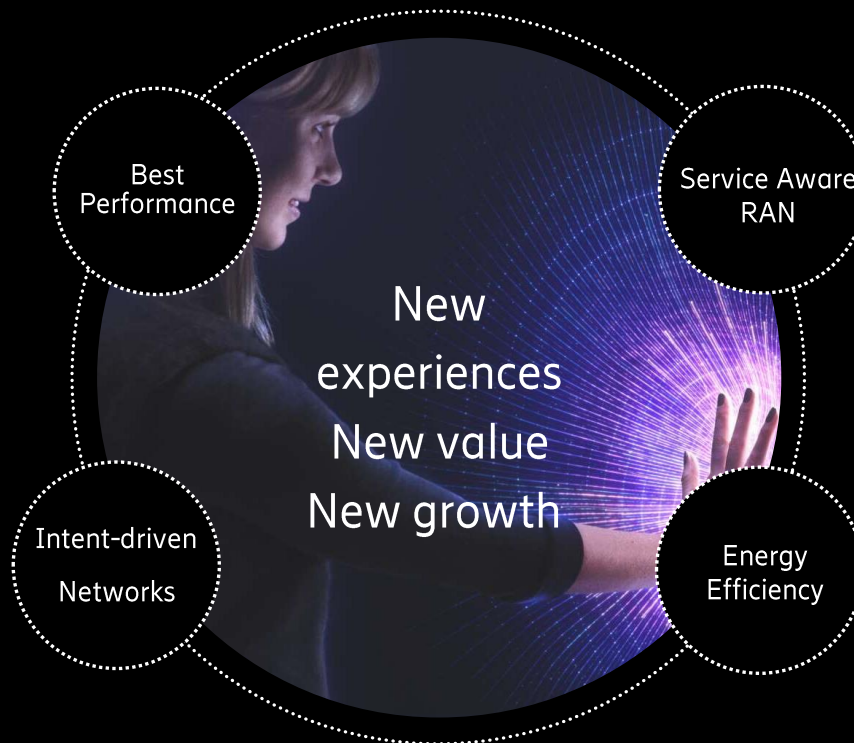
Programmable networks for sustainable growth

Spectral Efficiency

New HW and SW pushing technology boundaries

Intelligent Automation

Operational excellence
Enables scalability to grow



Differentiated connectivity

Premium connectivity with SLA fulfillment and exposure APIs

Optimal energy consumption

Radio resources utilization only when needed to secure user experience

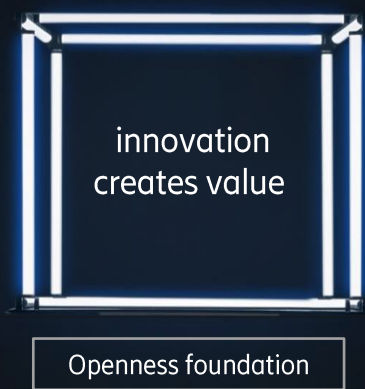
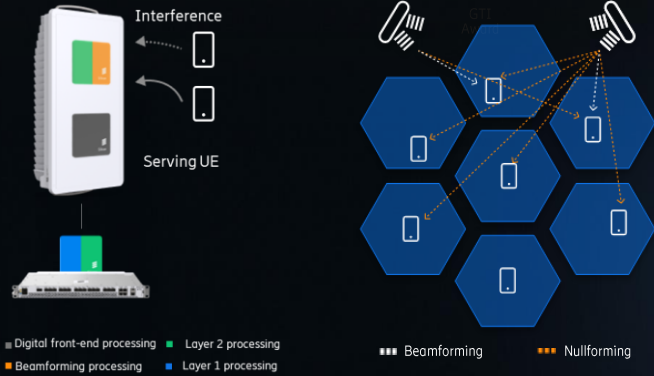
Open architecture for innovation

Making our customers successful with innovation

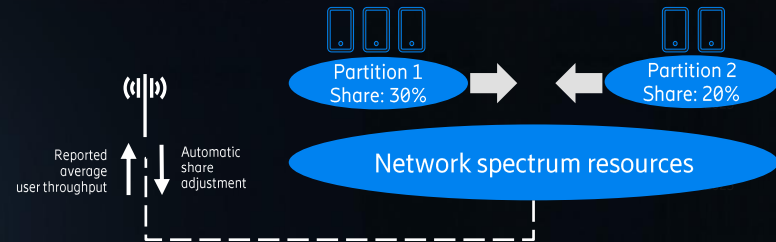


Interference Sensing

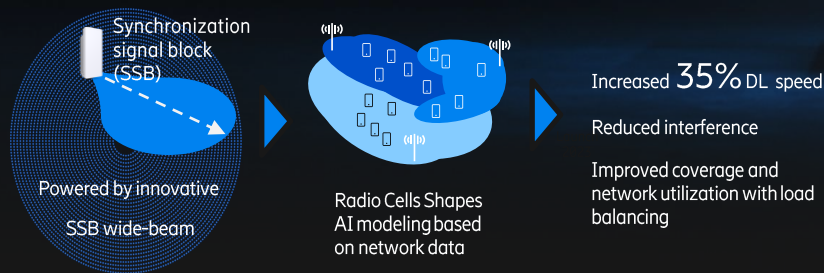
40% increased network capacity



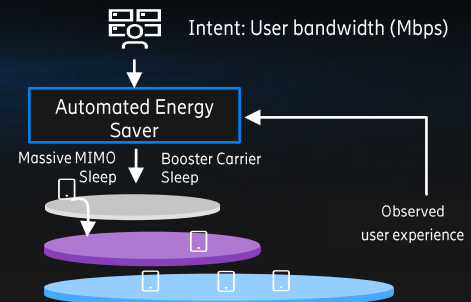
Automated Radio Resource Partitioning



Intelligent Cell Shaping rApp



Automated Energy Saver



Networks of the Future: Purpose-Driven, high-performing programmable networks



The Network Machine

- Semi-static
- Configuration-based
- Best effort performance



The Network Organism

- Energy and user experience conscious
- Intent-based
- Differentiated SLA-based connectivity and digitalization enabler

MWC24

Sarwar Khan

Global Head of Sustainability

BT



Prioritising purposeful networks

Efficient



Reducing energy use

Circular



Minimising waste

Enabling



Digitalising operations



Platform for good

MWC24

Moderator: Ane-Marte Nordseth Weng

Capgemini

Andy Aitken

Honest

Giampaolo Tardioli

Keysight Technologies

Rimma Iontel

Red Hat

Yogesh Malik

Tele2

Up Next

Future Security for Future Networks

16:15 - 17:15

MWC24