Telstra's Network 2020

SDN/NFV Evolution Network (SEN) Project
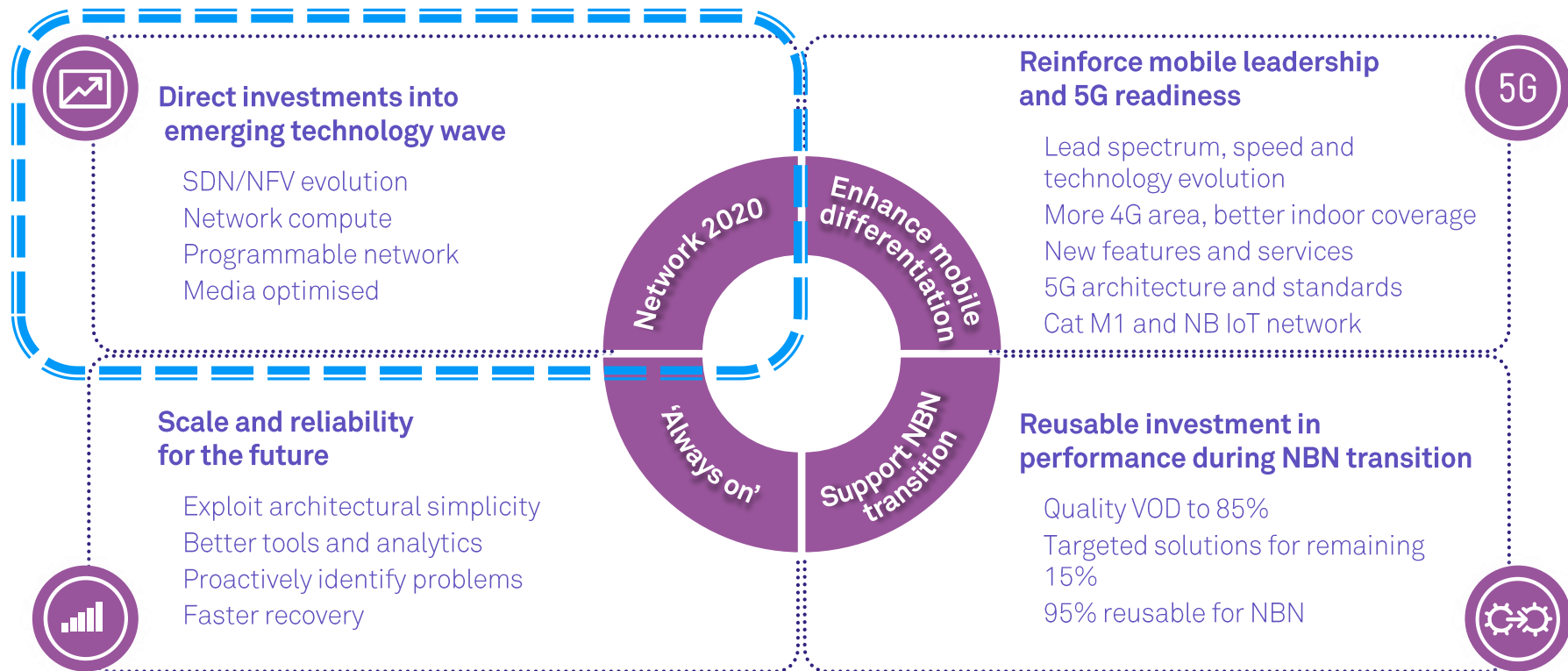
Agenda

1 Position the SEN project within the context of Telstra's strategy

2 Provide a deeper dive into the project, it's objectives and outcomes.

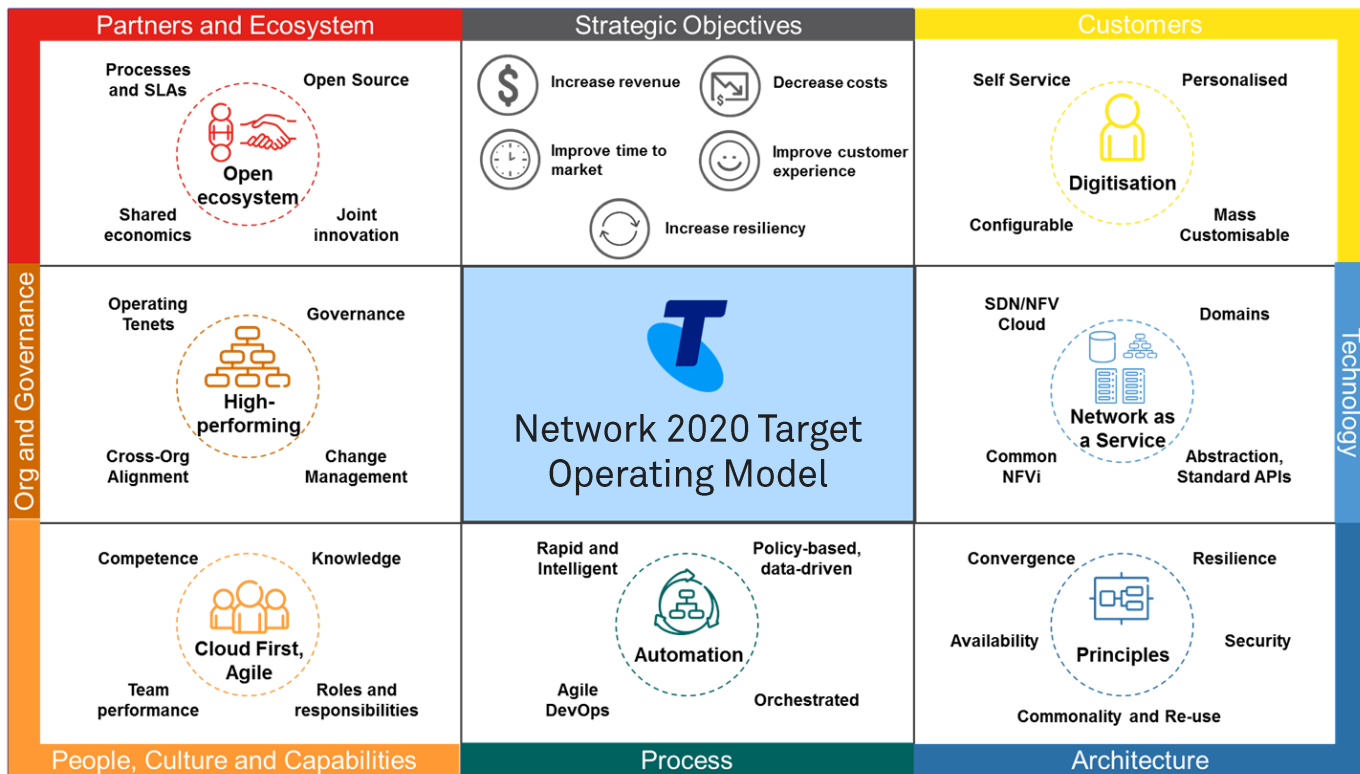**3** Outline the challenges, what we learned and the work still to do.

4 Q&A

Our Plan

TELSTRA

Purpose
To create a brilliant
connected future
for everyone

Vision
To be a world class
technology company that
empowers people to connect

Brand
To create better ways
to empower everyone to
thrive in a connected world

Strategic pillars

Deliver
brilliant customer
experiences

Drive value and
growth from
the core

Build new growth
businesses close
to the core

Strategic enablers

Networks
for the future

Digitisation

Culture and
capabilities

Networks for the Future

Direct investments into emerging technology wave

SDN/NFV evolution
Network compute
Programmable network
Media optimised

Reinforce mobile leadership and 5G readiness

Lead spectrum, speed and technology evolution
More 4G area, better indoor coverage
New features and services
5G architecture and standards
Cat M1 and NB IoT network

Scale and reliability for the future

Exploit architectural simplicity
Better tools and analytics
Proactively identify problems
Faster recovery

Reusable investment in performance during NBN transition

Quality VOD to 85%
Targeted solutions for remaining 15%
95% reusable for NBN

Network 2020
Enhance mobile differentiation
'Always on'
Support NBN transition
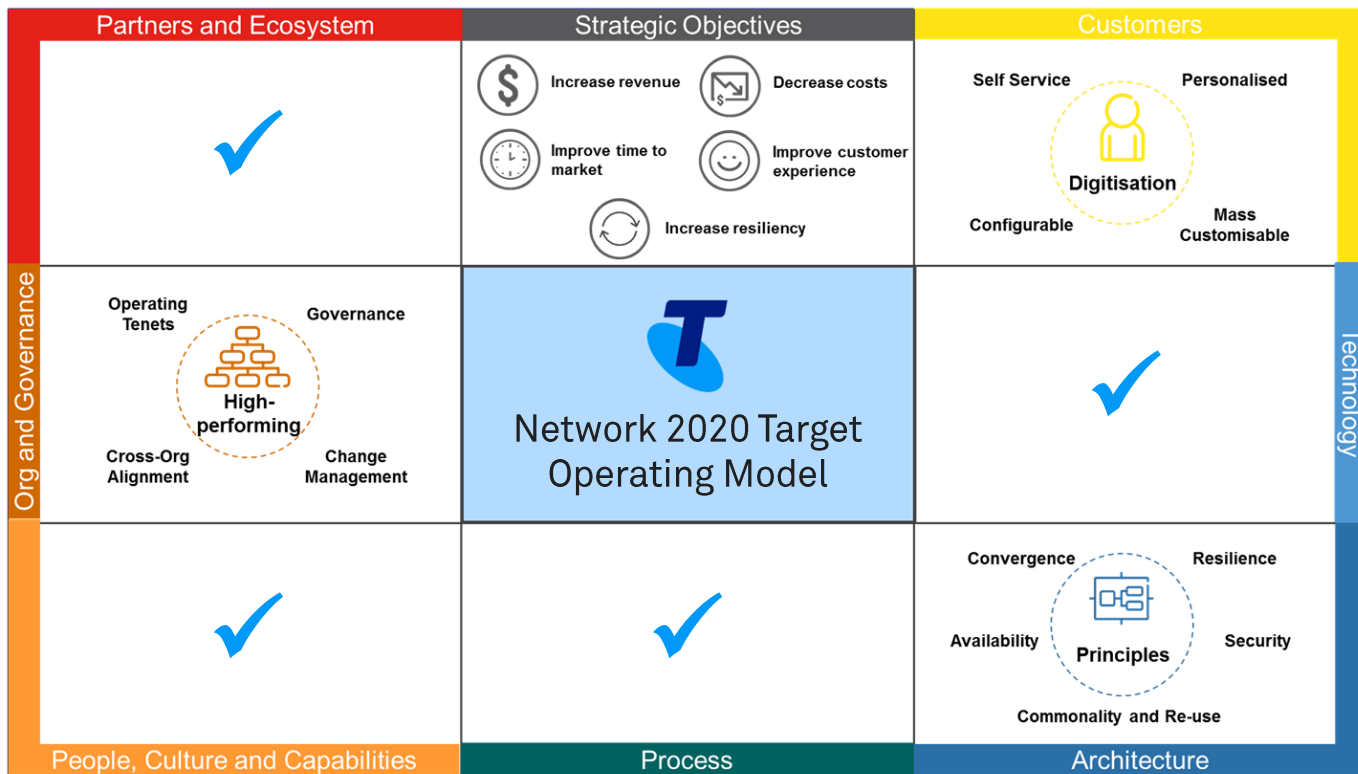
5G

Network 2020 Target Operating Model

Primary focus of SEN

SDN/NFV Evolution Network "Project SEN" ⚓

Challenge the Status Quo
Promote change by building a bridge to the future
Satisfy a short-term business need
Keep our customer's traffic safe

FROM:
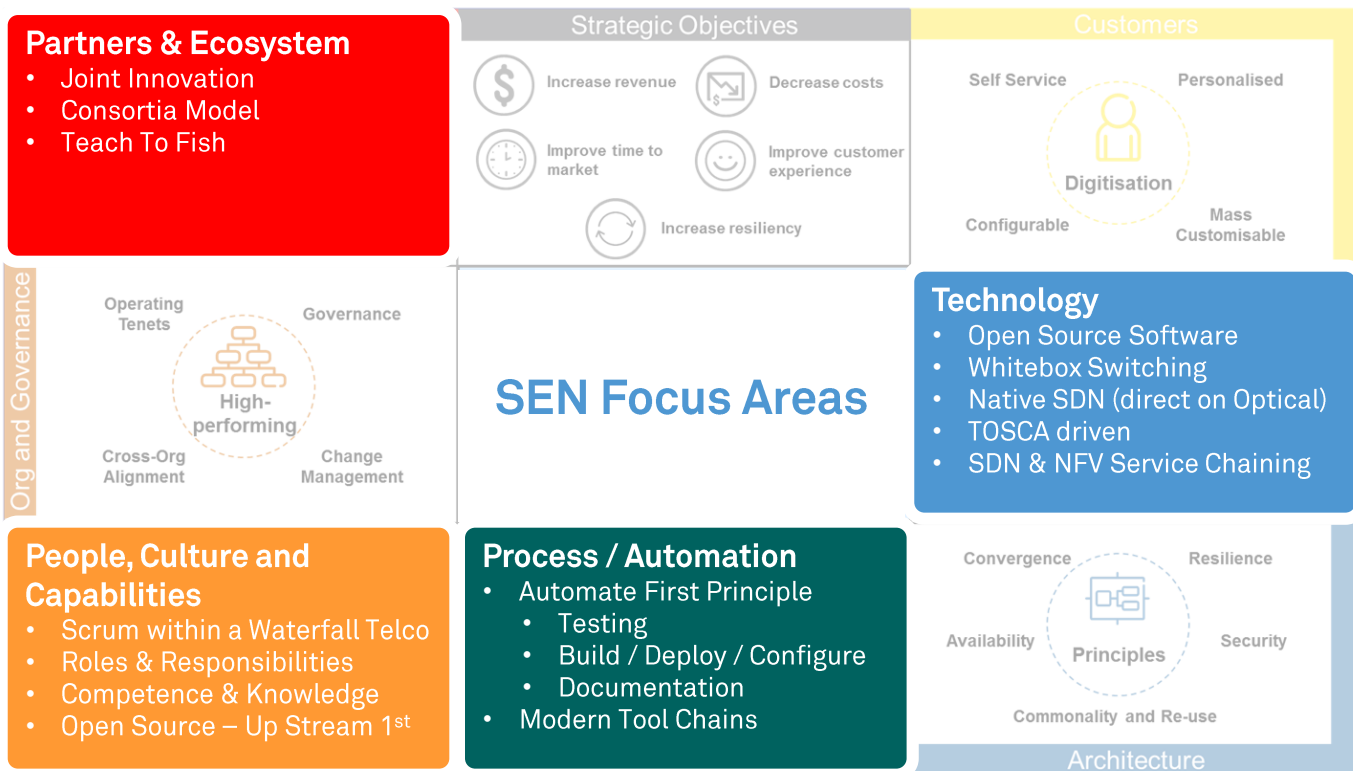Traditional conservative
Telecoms company

TO:
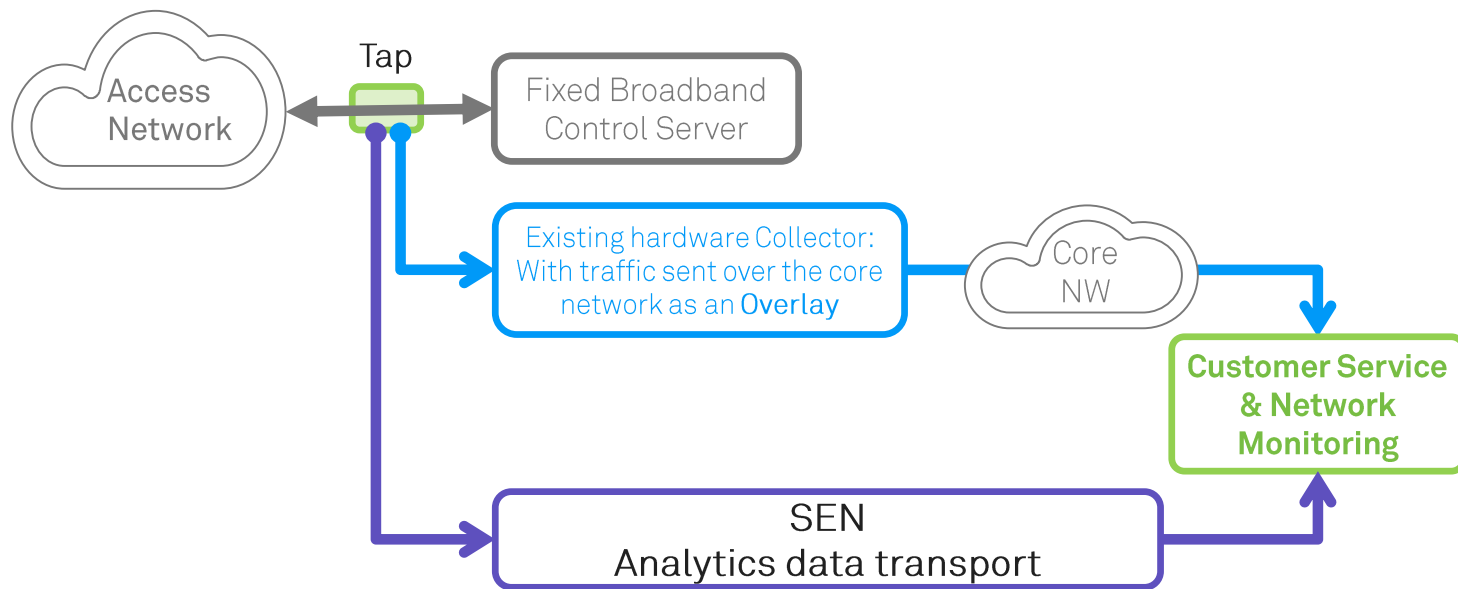A world class technology
company that empowers
people to connect

SEN
New technologies
New ways of working
New culture

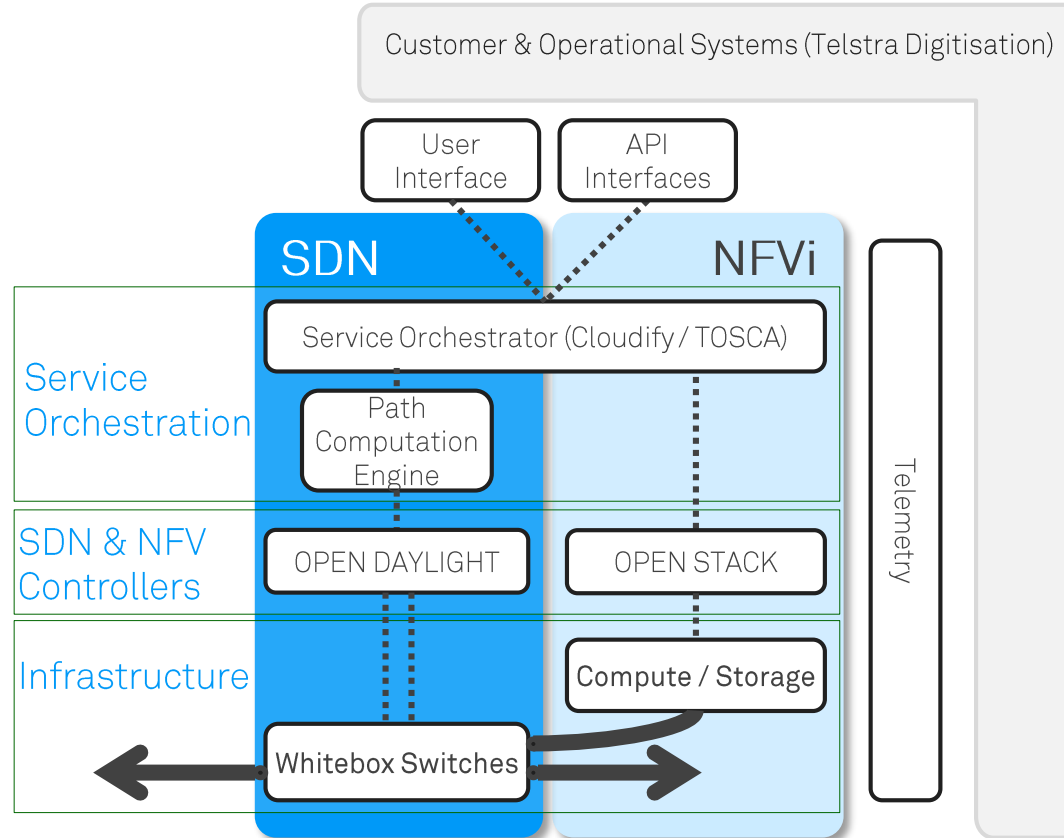*Deploy a National SDN/NFV based Analytics Transport Network*

New Ways of Working

Partners & Ecosystem
- Joint Innovation
- Consortia Model
- Teach To Fish

Strategic Objectives
- Increase revenue
- Decrease costs
- Improve time to market
- Improve customer experience
- Increase resiliency

Customers
- Self Service
- Personalised
- Configurable
- Mass Customisable

Digitisation

Org and Governance
- Operating Tenets
- Governance
- Cross-Org Alignment
- Change Management

High-performing

SEN Focus Areas

Technology
- Open Source Software
- Whitebox Switching
- Native SDN (direct on Optical)
- TOSCA driven
- SDN & NFV Service Chaining

People, Culture and Capabilities
- Scrum within a Waterfall Telco
- Roles & Responsibilities
- Competence & Knowledge
- Open Source – Up Stream 1st

Process / Automation
- Automate First Principle
  - Testing
  - Build / Deploy / Configure
  - Documentation
- Modern Tool Chains

Architecture
- Convergence
- Resilience
- Availability
- Security
- Commonality and Re-use

Principles

Deployment strategy: Protecting the business

Tap

Access Network

Fixed Broadband Control Server

Existing hardware Collector: With traffic sent over the core network as an **Overlay**

Core NW

Customer Service & Network Monitoring

SEN Analytics data transport

High Level Architecture

Delivered…

- National analytics transport network in production
- Core SDN/NFV network based on Open Source software and OpenFlow switches
- Accelerated development and software deployment
- Introduced DevOps and Telemetry based operations
- Our people have acquired Agile skilled
- Modern Tool Chain
- Proven consortia model

  Established a foundation for evolution

Insights: Success Factors

- Strong Executive Support

- Highly skilled and engaged staff

- Highly collaborative and dedicated vendors

- Insertion into a safe part of the network

- Clear and agreed operating principles

Insights: Real-world Challenges

Security   Reliability   Architecture   Complexity

SW Lifecycle Management   Documentation

"Brownfield" organisations

Governance & Funding   Procurement

Next Steps

Scaling:

- People
- Process
- Network & Technology

Broader loosely coupled Integration into the company's IT environment
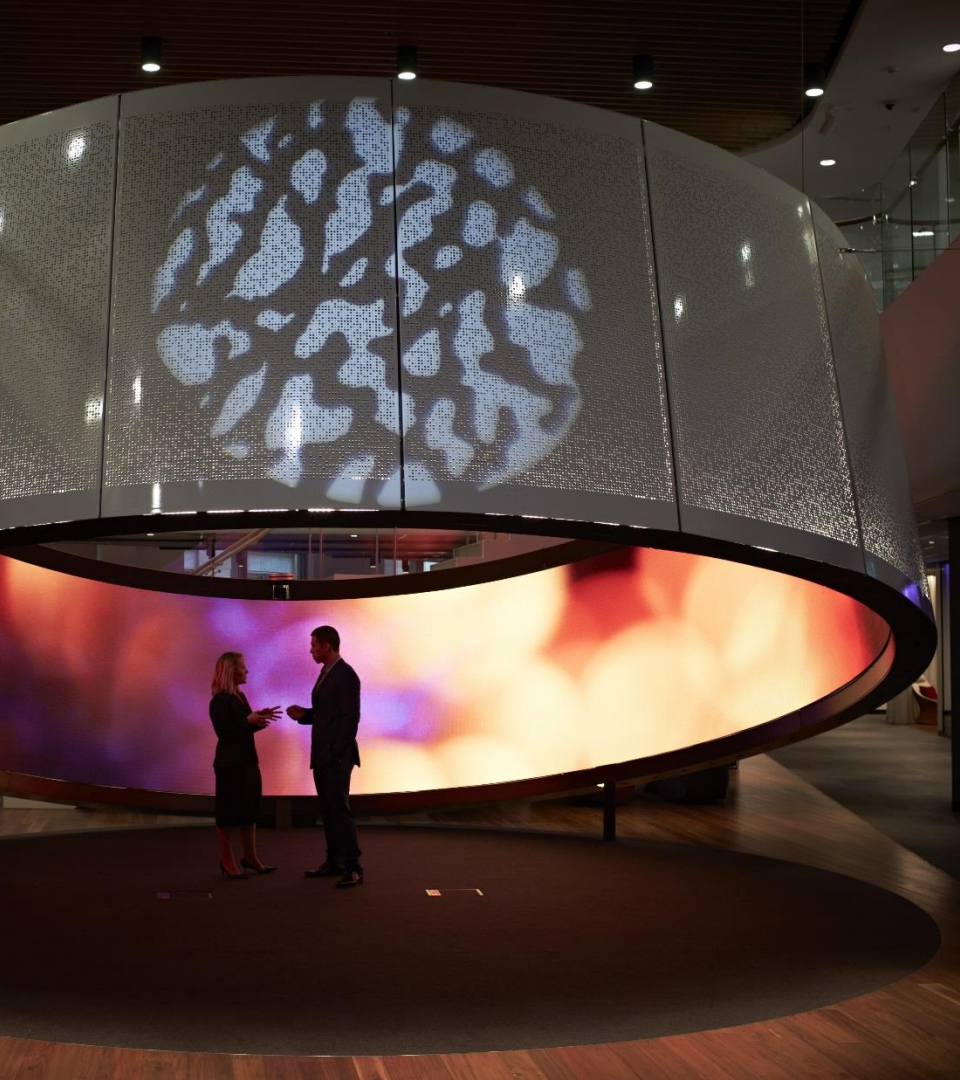
- ONAP (AAI and DCAE leading to CLAMP)

Summary

We have cross company aligned vision and strategy

A new pure play SDN/NFV Analytics transport network

New Ways of Working - A strong start but still lots to learn

Q&A