



Shaping the **FUTURE.**
TOGETHER.

Tech
Mahindra

ONF Connect 2019

Enabling the new Digital CSP Blueprint

**Unprecedented Demands
on the Networks**

RUN BETTER



CHANGE
FASTER



GROW
GREATER



**The "Digital" CSP
requires a new blueprint**

OPEN MODULAR
ARCHITECTURE

INNOVATION
ACCELERATION

SW CENTRIC
AI/ML

DATA
INSIGHTS

INTELLIGENT
AUTOMATION

NEW BUSINESS
MODELS

**Tech Mahindra
"The Innovation
Orchestrator"**

Partners



Strategic forward looking Partnerships
committed to change the status quo

Innovation

Platforms

Open Architectures

ACCESS

CORE

OSS

Enterprise

Platforms powered by the most innovative
Software and Technologies

Transformation & Co-creation

People



Focused Empowered
Multifunctional Skilled Teams

Integration & Scale

Our Key investments

Strong proponent of Open-source platforms

NETOps.ai

TechM framework to accelerate 5G adoption



AI/ML marketplace

VNF-Xchange

Platform to accelerate SDN/NFV transformation

Open source automation & orchestration platform

DAAIP

Real time AI, analytics tool

New-age Delivery



Reuse assets



Right skilling



Smart planning



Corporate governance



DevOps delivery



Rapid Prototyping

Digitally skilled People

Empowering associates to have a pervasive, personalized and continuous learning

#NAD (Uaas)



Reverse Mentoring



TechM Process / frameworks



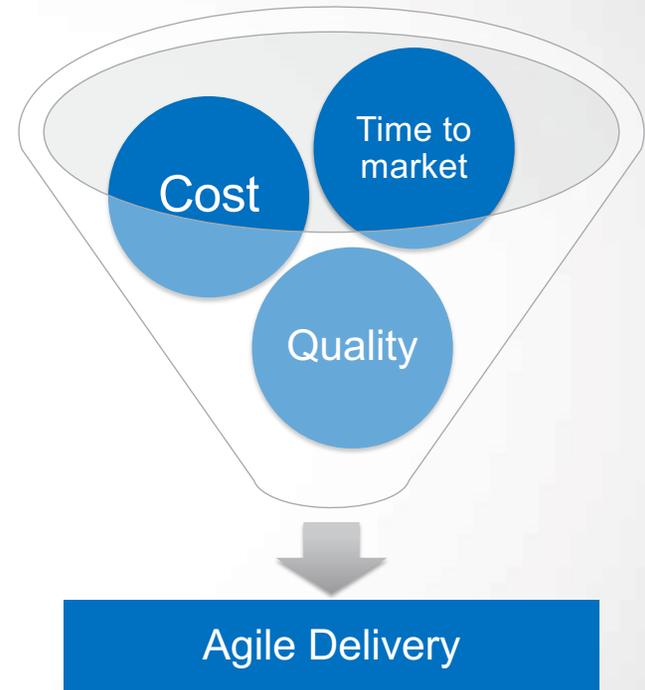
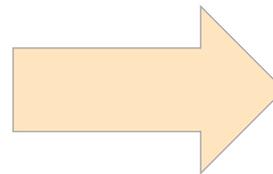
ADOPT (DevOps)
DevOps platform for agile “concept to revenue”, Continuous planning, integration, deployment, monitoring



Pro-MART
Reusable process blocks for processes complying with industry best practices

More ...

TechM Innovation Lab – Operating Principles

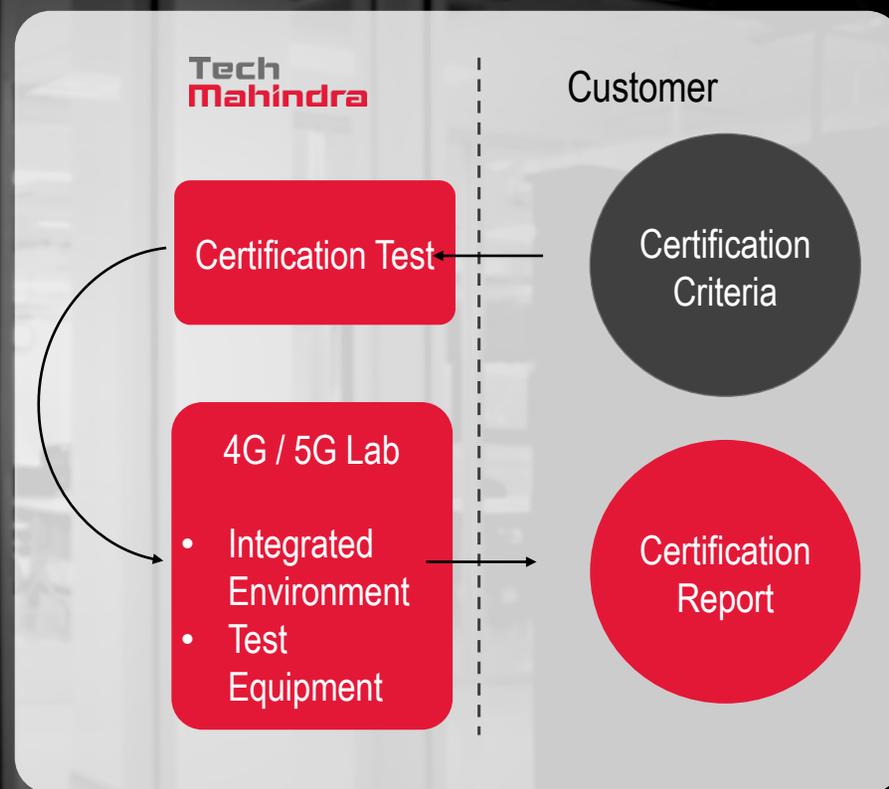


TechM Lab At a Glance

Immediate Benefits

VNF-Xchange Integration Platform

VNF-Xchange setup in:
Redmond, WA
Bengaluru, India
Brussels, Belgium
Aastral Park, UK
Cyberjaya, Malaysia
Melbourne, Australia...



Packaging & VNF
Onboarding

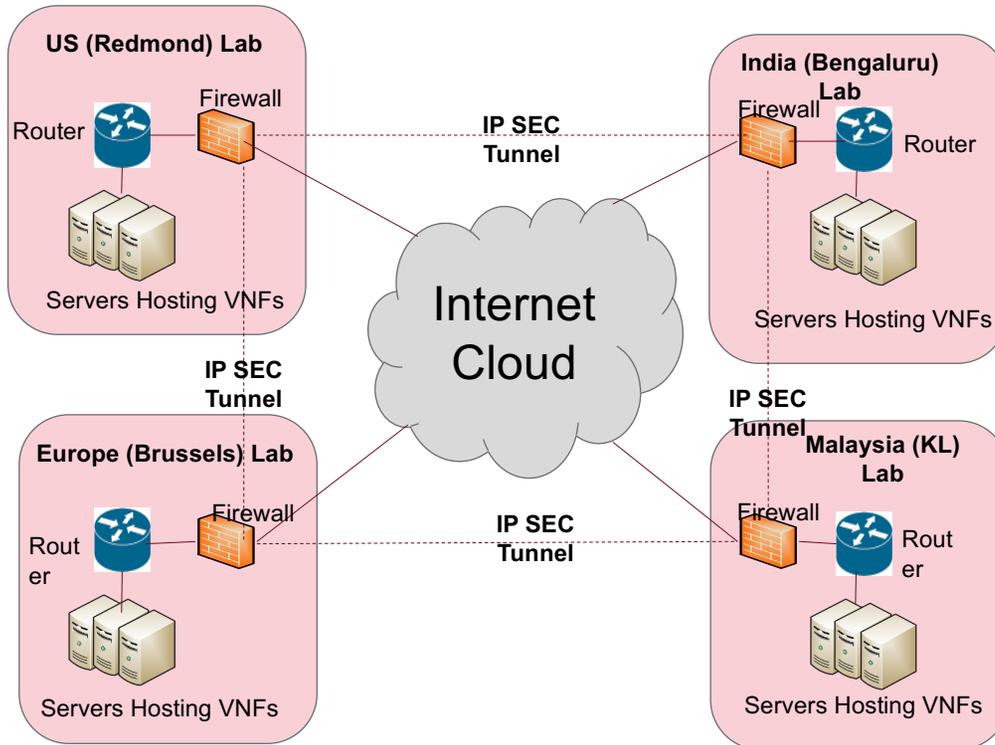
Integration, Testing &
Certification

VNF Upgrade
Automation
Framework

Performance &
Efficiency Testing

Network
Slicing

VNF Xchange – Our Global Lab Presence and Services



VNF Design Certification

- Acceptance Testing of VNF.
- Deployment models, configuration testing, availability testing

VNF Performance / Benchmarking Certification

- Performance Certification of the VNF
- Test environment options - Virtualized Infrastructure, Bare metal platform, DPDK, SR-IOV, ...

VNF-Xchange Stack Certification

- Certification testing in a defined environment - NFV-I, VIM, VNFM, NFVO, Service Assurance systems.
- Deploy, Configure, Integrate & Validate

Productized Solution Certification

- Integrate and Certify a solution (e.g. VoLTE, vCPE)

VNF Xchange Platforms and Solutions

- | | | | | |
|--|---|--|--|--|
| <ul style="list-style-type: none"> — vEPC — VoLTE, VoWiFi — Fixed IMS — Pre-integration and Validation — Performance Benchmarking — Consumption based predictable cost model | <ul style="list-style-type: none"> — 5G CUPS Implementation — Network Slicing — MEC – Cloud Gaming, Video Delivery | <ul style="list-style-type: none"> — ONAP — Ciena BP, Rift.io — Microservices — Closed Loop Control — Performance Management — Service Assurance | <ul style="list-style-type: none"> — vRAN Disaggregation: iRRH + vBBU — Ethernet Fronthaul over any transport — 38% TCO Reduction — 40% Capacity Improvements with inter site CA | <ul style="list-style-type: none"> — Tactix, RoPro, Uno — AI / ML enabled platforms (ACUMOS) — Ticketing classification & resolution — Reduce L1/L2 support by 30% — VNF Onboarding Automation — Test Automation – Robot Framework |
|--|---|--|--|--|

4G & IMS



5G & MEC



OSS 2.0 Next Gen Orchestration



Access

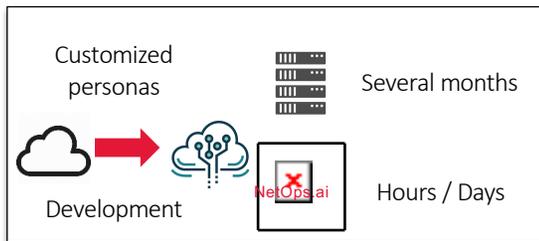


Automation

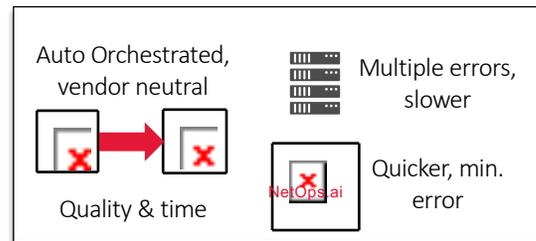


netOps.ai - Network Automation and AI-enabled Operations

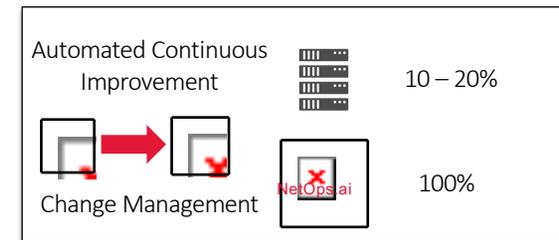
Automated Cloud Deployment



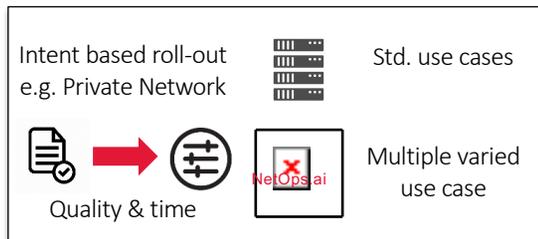
VNF Orchestration & Configuration



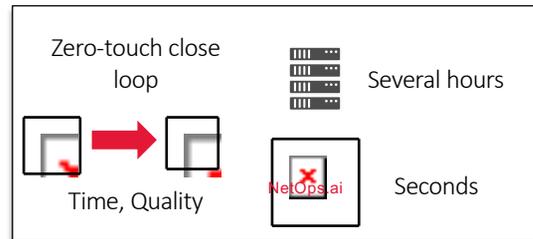
NetDevOps – E2E Network CI/CD Framework



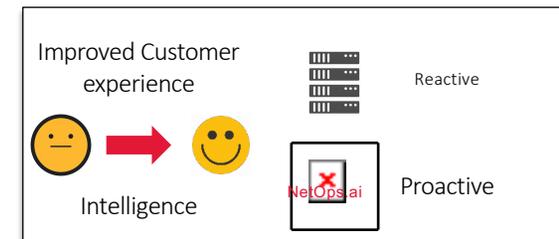
Automated Network Design & Roll-Out



Network Slice Assurance



AI driven intelligent network operations



TechM Geared for 5G Managed Transformation



Collaborating with
Industry Bodies

ONF
+
TMForum 5G Catalyst
+
SDN / NFV



5G CoE
(Center of Excellence)

In partnership with Intel
xRadio + vRAN +
vCore + vIMS + ONAP

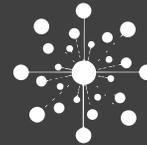
E2E Network Slicing
for MWC-Americas



Innovative
Platforms

VNF-Xchange

vRAN
vEPC
vIMS
MEC
ONAP
TRUe



Monetization
Use Cases

Video Caching
Smart Stadium
Real Time Gaming
TeleHealth
Education



Disruptive
Collaboration

Partner Eco-system
Intel, HPE, Quanta
RedHat, VMWare
AltioStar 5G-AN
Affirmed 5GC
Innoeye, RIFT.io



Network
Rollout

mmWave 60 GHz
Rollout
RoPro



Thank You