



NETWORK FUNCTIONS VIRTUALIZATION & THE PATH FORWARD

@innovarista



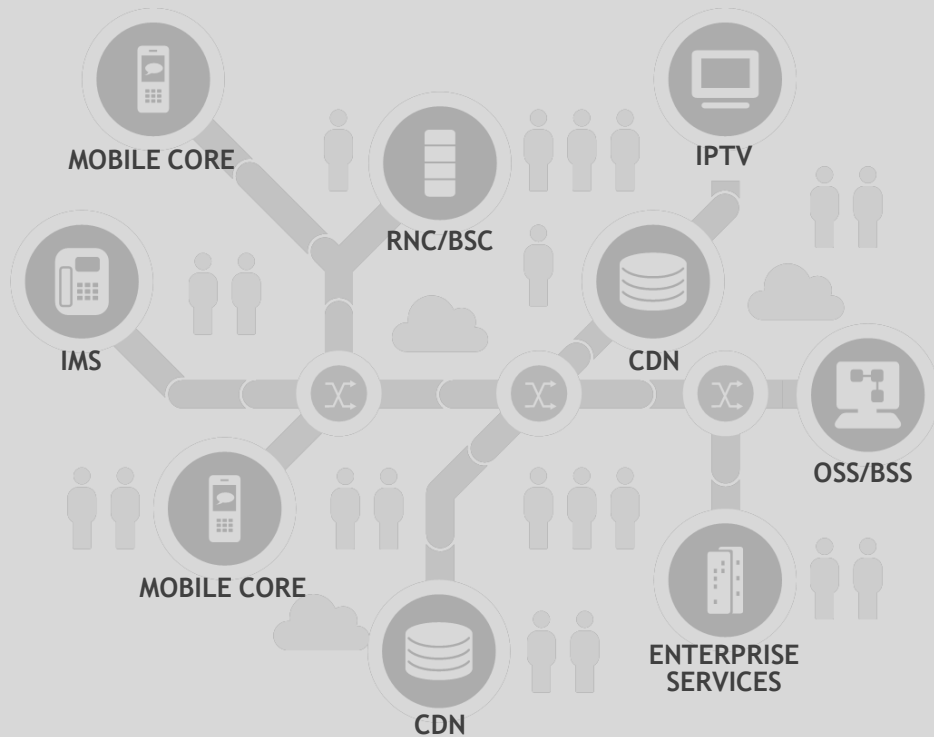
Jose de Francisco
Director, Cloud Solutions Marketing
IP Platforms Business Division



@ALU_Cloud

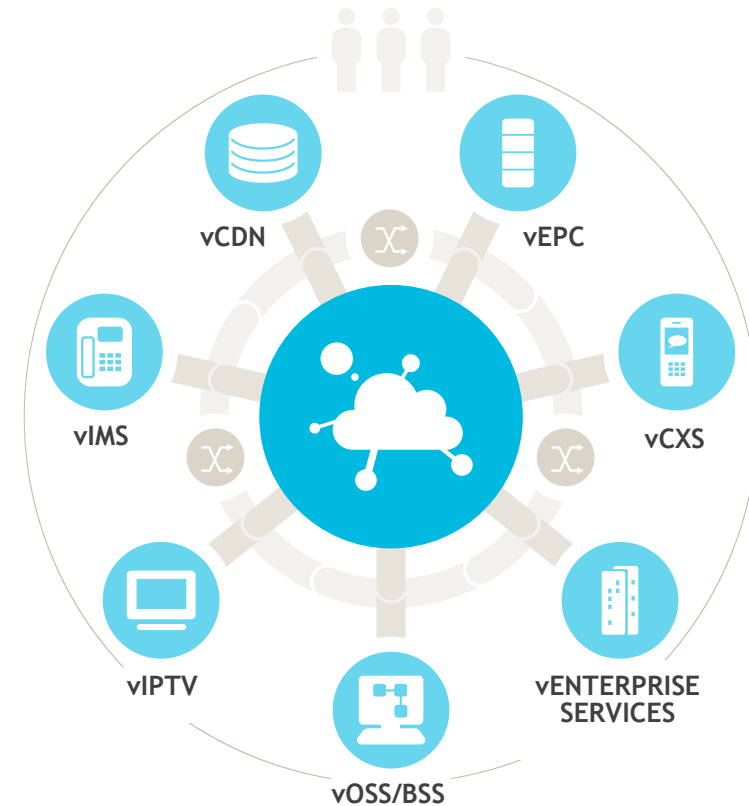
THIS IS A BRAVE NEW WORLD

FROM TODAY'S **CONVENTIONAL NETWORK**



RUNNING ON PURPOSELY BUILT
DEDICATED HARDWARE...

... TO A LEAN AND DYNAMIC
SOFTWARE DEFINED ENVIRONMENT



WITH VIRTUALIZATION, DATA CENTERS, SHARED
RESOURCE POOLS, LIFECYCLE AUTOMATION...

BECAUSE THE IP ECONOMY IS DRIVING NFV

VoLTE
145%



Predicted CAGR of
VoLTE subscribers
from 2012 to 2017

Video
66%



Over two-thirds world's
mobile data traffic will
be video by 2017

M2M
3x



Global M2M revenues
will triple - \$16.7bn in
2013 to \$44.8bn in 2018

Enterprise
37%



Of population - mobile
workforce of 1.3 billion
by 2015

AND THESE ARE CRITICAL SUCCESS FACTORS

INNOVATIVENESS WITH SPEED AND AT SCALE

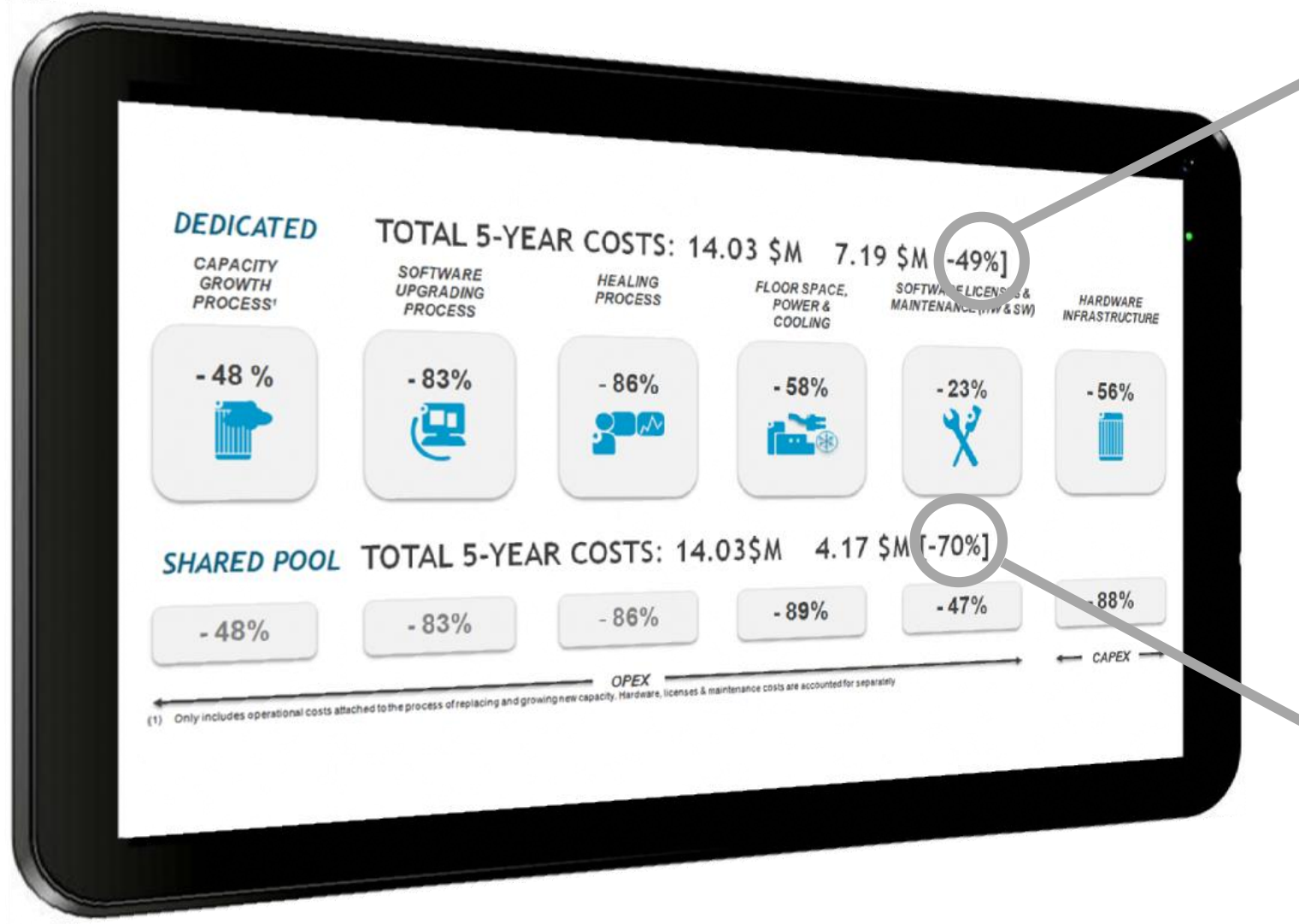
RELEVANT SERVICES AND ENGAGING USER EXPERIENCES

DYNAMIC SERVICE DRIVEN NETWORKS

LEAN AND AGILE OPERATIONS

COMPELLING CLOUD ECONOMICS

CLOUD ECONOMICS ALSO DRIVING NFW



DEDICATED SYSTEMS

Cost efficiencies: **49%**

REFERENCE SAMPLE:

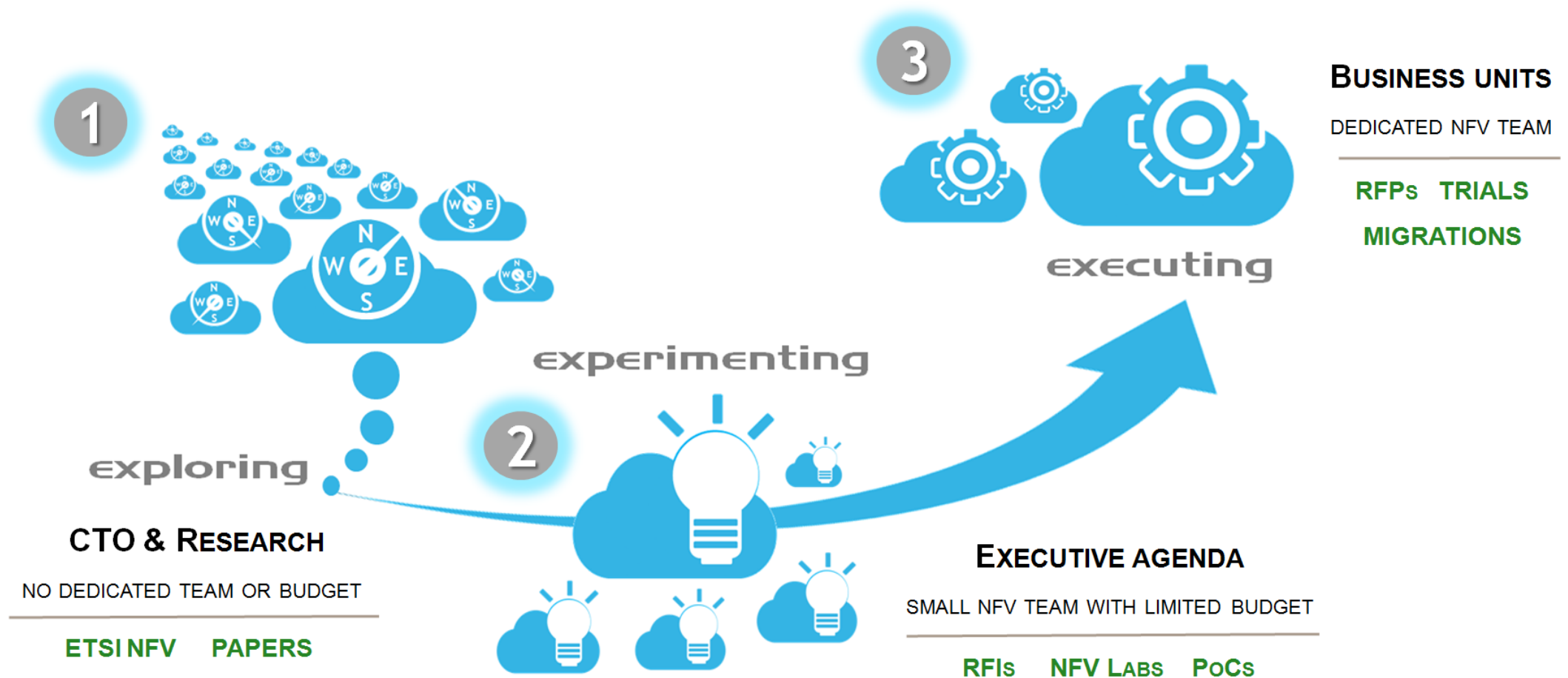
- NETWORK OPERATOR
- NORTH AMERICA REGION
- DNS REPLACEMENT
- CAPEX & OPEX STUDY
- 5 YEAR PMO vs. FMO ANALYSIS

SHARED POOLS

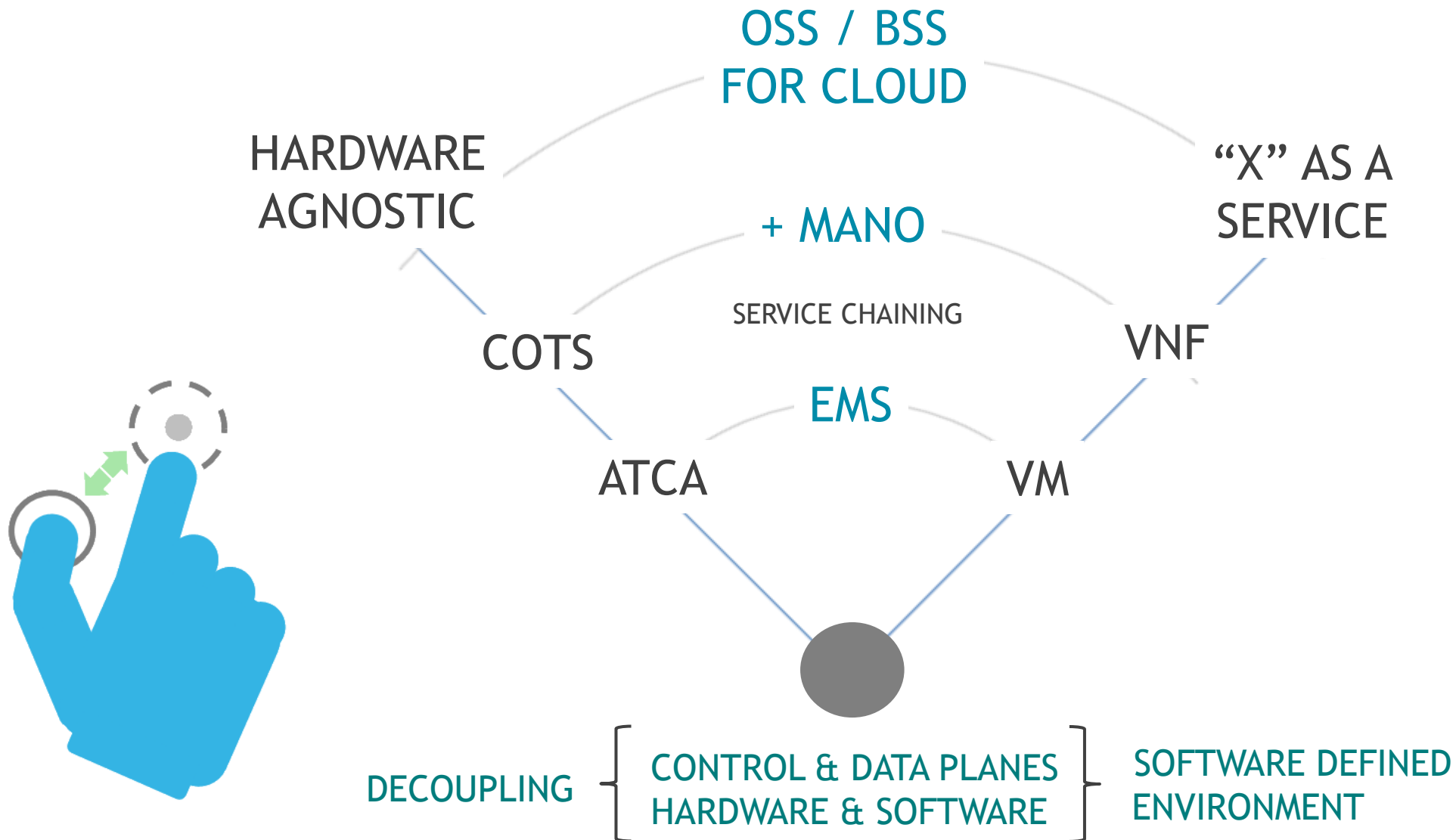
Cost efficiencies: **70%**

- + OPTIMIZING FOR RoA
- + OPPORTUNITY COST BENEFITS

CHECK POINT: NFV IS IN MOTION ALREADY



MATURITY LEVELS & THE NFV JOURNEY



WHAT IS YOUR **NFV** VISION?

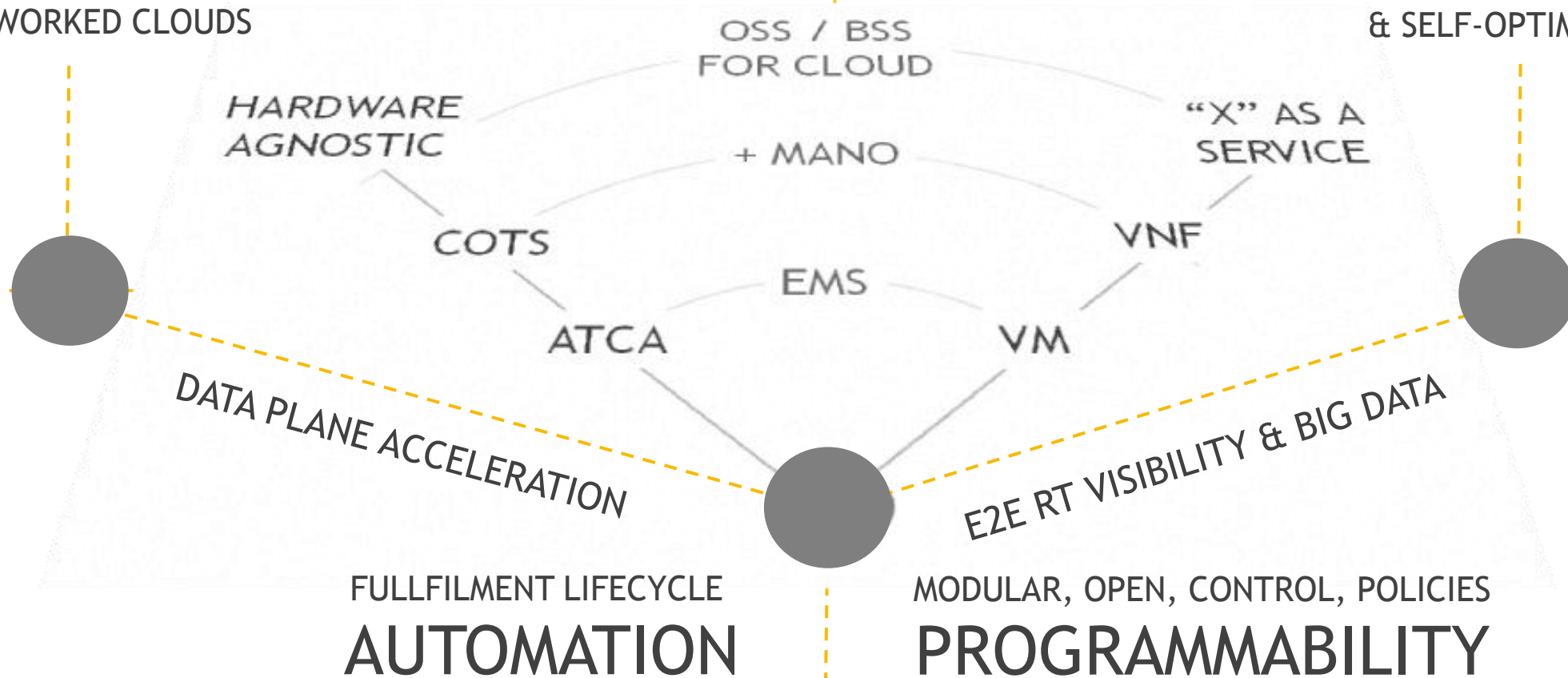
LEAN & FIT FOR SERVICE

SMART, DYNAMIC & AGILE

ON DEMAND & HIGH SCALING

DISTRIBUTED SYSTEMS
& NETWORKED CLOUDS

RAPID SERVICE CREATION
& SELF-OPTIMIZING SYSTEMS



NFV 'S RULES OF ENGAGEMENT

LEAN & FIT FOR SERVICE

SMART, DYNAMIC & AGILE

DISTRIBUTED SYSTEMS
& NETWORKED CLOUDS

RAPID SERVICE CREATION
& SELF-OPTIMIZING SYSTEMS

OSS / BSS
FOR CLOUD

HARDWARE
DIAGNOSTIC

"X" AS A
SERVICE

1

2

3

COCREATION

PoCs WITH CUSTOMERS
& LEAD USER INNOVATION

DEVOPS

DEVELOPMENT & OPERATIONS
CLOUD WORKSTYLE & ORG CULTURE

COOPETITION

COMMUNITIES & ECOSYSTEMS
MULTI-VENDOR ENVIRONMENTS

FULLFILMENT LIFECYCLE
AUTOMATION

MODULAR, OPEN, CONTROL, POLICIES
PROGRAMMABILITY

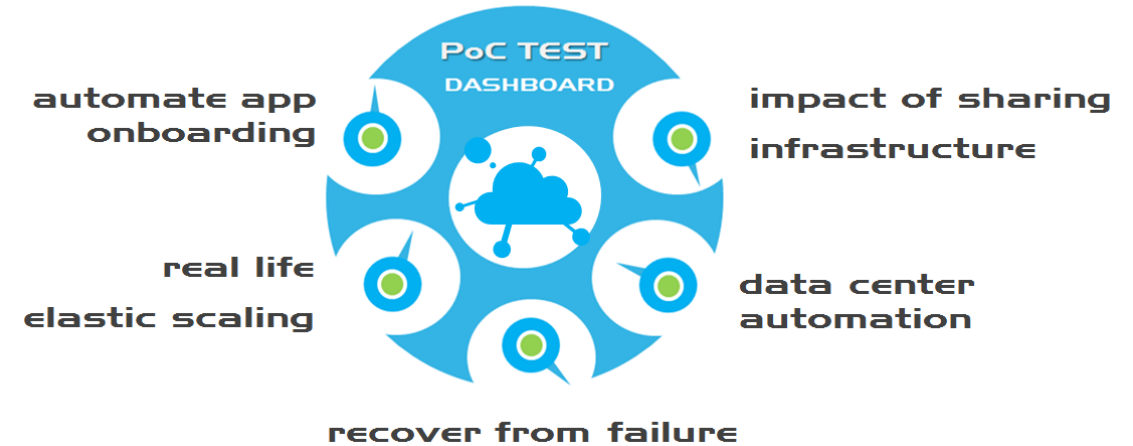
WHAT OPERATORS ARE TESTING



NFV USE CASES

1	Network Functions Virtualization Infrastructure as a Service
2	Virtual Network Function as a Service (VNaaS) – CPE, PE
3	Virtual Network Platform as a Service (VNPaaS)
4	VNF Forwarding Graphs
5	Virtualization of Mobile Core Network and IMS
6	Virtualization of Mobile Base Station
7	Virtualization of the Home Environment
8	Virtualization of CDNs
9	Fixed Access Network Functions Virtualization

http://www.etsi.org/deliver/etsi_gs/NFV/001_099/001/01.01.01_60/gs_NFV001v010101p.pdf



THE PLATFORM FOR NFV
CLOUDBAND



LESSONS LEARNED

SERVICE LEVELS

“We need to maintain or exceed the stringent service availability and real time performance”

OPERATIONS

“Cloud products must operate in an open and independent environment”

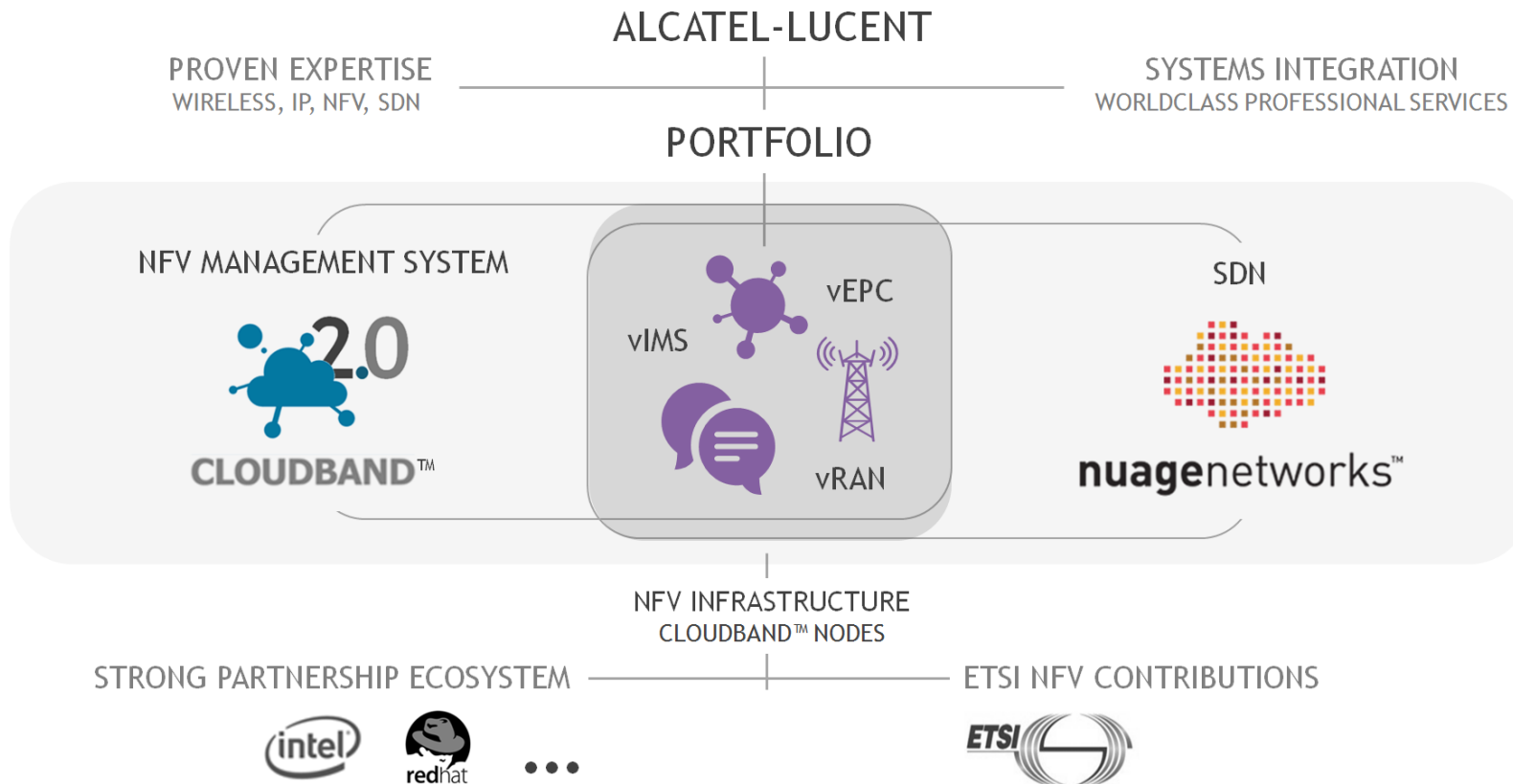
“Getting the operational aspects to work is critical to bring the automation we need”

INTEROPERABILITY

“Traditional services must seamlessly interwork with cloud services because the existing ones will be transitioned as capacity is exhausted in the current network”



WE ARE LISTENING AND TAKING **MOBILE NETWORKS** TO THE **CLOUD**



**INFONETICS
RESEARCH**



Alcatel·Lucent

TOP NFV & SDN VENDOR

“SDN and NFV Strategies:
Global Service Provider Survey”

March, 2014

LET'S ACCELERATE NFV WITH COMMUNITY

29

PARTNERS

inktank

radware

nominum

FRAFOS

VYATTA

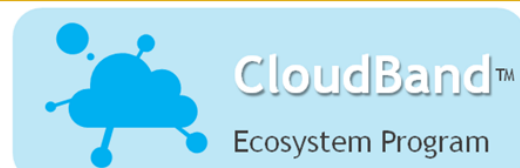
CITRIX

helo

nuagenetworks

SERVICE PROVIDERS

NFV PLATFORM / OSS TECHNOLOGY VENDORS



VIRTUALIZED APPLICATION VENDORS

AND MORE PARTNERS ARE SIGNING UP!

pt

Metaswitch Networks

intel

hp

StackIQ

GIGASPACES

redhat

openstack

Mellanox TECHNOLOGIES



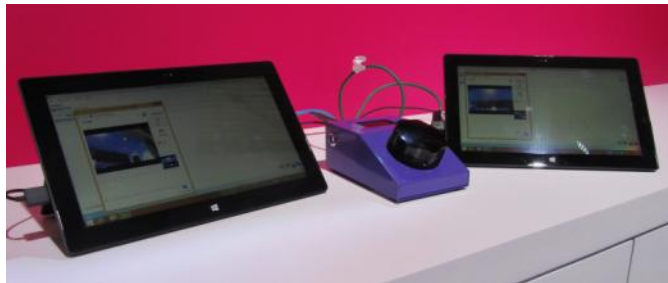
NFV Lab

NFV REQUIRES MANY
SPECIALIZED PLAYERS

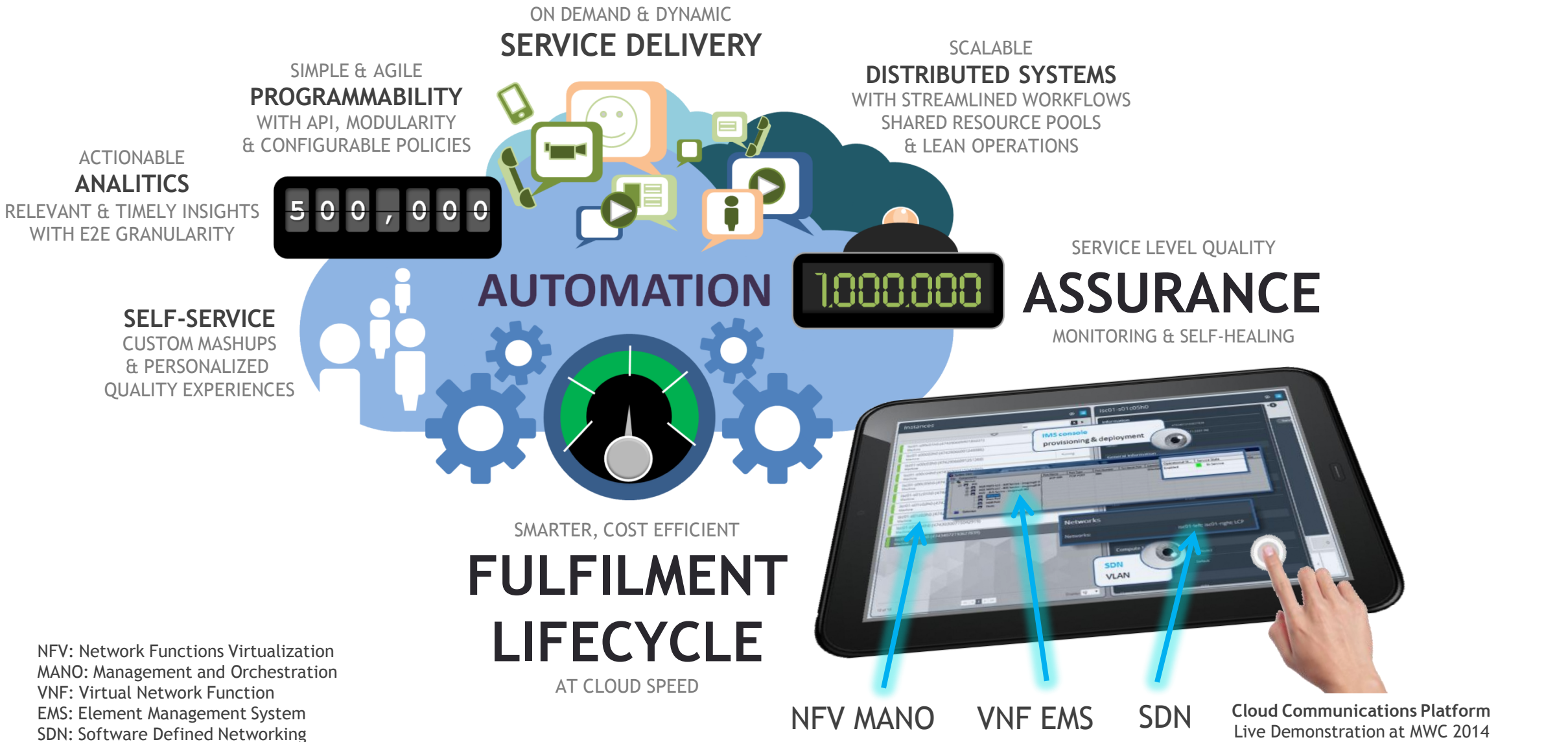
CREATE A COMMUNITY
WITH COMMON GOALS

DEFINE E2E SOLUTION AND OPERATIONALIZE

NFV DEMONSTRATION



TOWARD A SERVICE DRIVEN OSS/BSS FOR THE CLOUD AGE



NFV: Network Functions Virtualization
MANO: Management and Orchestration
VNF: Virtual Network Function
EMS: Element Management System
SDN: Software Defined Networking

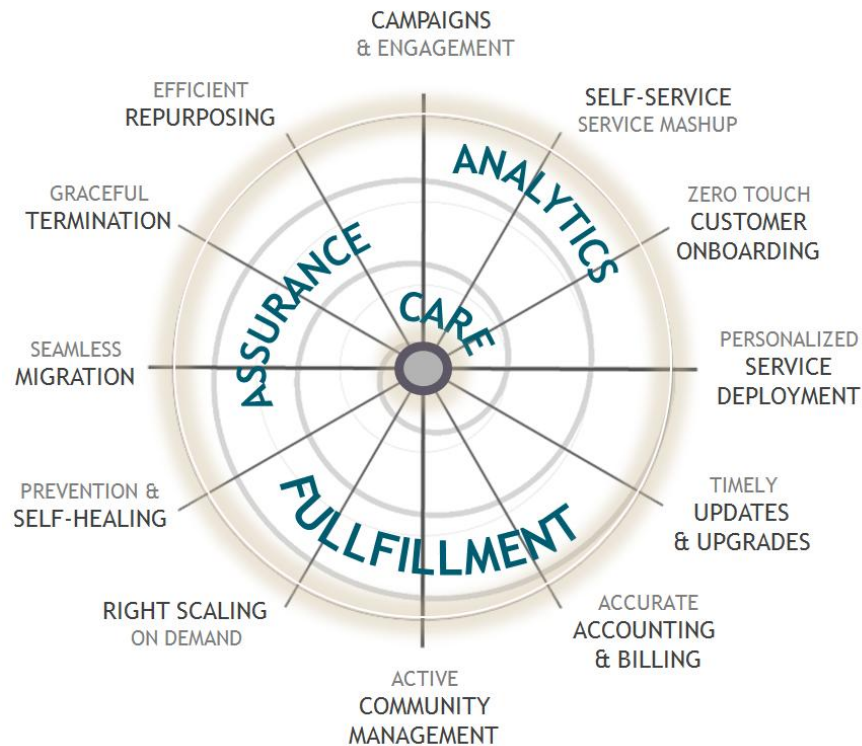
BUSINESS MODEL INNOVATION

EFFORTLESS LIFECYCLE AUTOMATION



FREES US TO TAKE ADVANTAGE

OF WHAT CLOUD HAS TO OFFER



co-creation
with customers

DevOps

rapid
service
creation

lead times
shorter

lean business
& agile operations

openness

performance

analytics driven

& visibility

optimization

continuous

centric

experience

innovation

experimentation

cooperation in
multivendor environments

ecosystems &

ALL LEVERAGING SHARED RESOURCE POOLS & WORKFLOWS

WHERE A NEW MINDSET MATTERS AS MUCH AS TECHNOLOGY



let's continue our discussion:



Alcatel-Lucent Cloud



@ALU_Cloud



CloudBand NFV Ecosystem

www.alcatel-lucent.com/solutions/cloud