Your Digital Network. Your Future

5G Tidal Transformations
Accenture Point of View

5G Asia Conference
September 27, 2016, Singapore

High performance. Delivered.
The world before 5G
The three tidal effects of 5G
Get it right
5G
CSPs will need to cater to various defined/non-defined users, providing a combination of speed, reliability and/or substantial accessibility to meet the unique expectations of individual connected users.

3G – HSPA+
The transformation from voice to data and the confluence between the media and entertainment and communications industries resulted in seismic changes in the business.

4G – LTE+
CSPs benefited from the content and social explosion to fund their 4G business case. They missed the over-the-top (OTT) opportunity to further monetize their networks.

Copyright © 2016 Accenture  All rights reserved.
5G brings three tidal transformations impacting users, market and CSPs

5G Business Model

Innovative services facilitate an evolution in business and collaboration among different players.

Technology Innovation

New RAN Architecture and Core Platform promote disruptive technologies in greenfield areas as well as evolution of existing trends.

Operations & Management Complexity

Network & IT architecture merge, E2E Services-based operations – this leads to a tidal transformation in stacks, processes and people.
Vertical industry will drive the 5G business case and monetization will require an ecosystem play…

Vertical industries such as automotive, manufacturing, health, consumer and retail will direct global GDP into 5G transformation to add pervasive connectivity into their business architectures.

- **Connected Home**
  - Safety & security
  - Domotics & entertainment
  - Energy efficiency

- **Connected Car**
  - Safety & security
  - Convenience
  - Live navigation
  - Infotainment

- **Connected Government**
  - Connected public admin.
  - E-government
  - Connected civil protection

Vertical industries will have the capacity to own networks, just like they own IT today.

CSPs need to be ready to manage a fluid ecosystem and defend their core businesses.

- **Connected Health**
  - Care-eHealth
  - Health monitoring & prevention
  - Wellness

- **Connected City**
  - Smart meters
  - Smart traffic lights
  - Real-time analysis

- **Connected Enterprise**
  - Real-time analytics
  - Digital transformation
  - Factory automation
Monetization will be possible, if the CSP is able to manage critical control points of the ecosystem

- The Communication Service Providers (CSPs) have the natural position to realize interoperability and drive standardization.

- Telcos come together to align local regulations and international standards to ensure interoperability.

- Possible control points on the network:
  - Security
  - Interoperability
  - APIs
  - Analytics
To realize the full potential of the 5G ecosystem, operators will create a horizontal platform, exposing 5G capabilities to partners and customers.

Previously, technology cycles were managed trade-offs between legacy evolution versus disruptive innovation with powerful industry consortia dictating the speed of change. 5G can enable faster transition to new technologies at unprecedented speed.

**Vertical Applications**
Entertainment | IoT | Tactile Internet | etc.

**Enabler**
Analytics | Service Management | APIs

**Network Function Layer**
Network Slicing | Central and Edge Cloud Nodes | RAT Agnostic | Network-as-a-Service

**Infrastructure**
Spectrum Transformation | Dense Deployments | Multi-RAT | Sharing & Multi Operations | Coordinate Interference

**Devices**
Wearables | Machines | Sensors | Media devices

Source: NGMN Alliance, 5G PPP
It’s all about integration!

Technology innovation enabled by 5G adds complexity. In addition, a variety of requirements on future networks will challenge the network operators’ ability to integrate.

- Support an abundance of applications and devices with very different requirements
- Network slices per customer
- Heterogeneous networks, with distributed approaches

Elements to manage complexity are:
- Service-oriented telecoms platform with network functions catalogue.
- DevOps-based approach to reduce time-to-market and increase flexibility.

Internal Ecosystem

- Software Factories
  - XaaS
  - Release
- Internal Assets
  - XaaS
- Internal Clients
  - XaaS
  - XaaS
  - XaaS

External Digital Ecosystem

- vNEPs
- OpenStack Community
- Standardization Groups
- HW/SW Suppliers
- 3rd Party/OTT

Virtual functions
- XaaS
- Major
- Minor
- Patches
Operating architecture transformation will be key to manage complexity and unfold new opportunities

Traditionally, mobile networks were designed with a lean and effective architecture. In addition, they were based on a technology-segmented operations. 5G will require the development of a horizontally integrated operating model.

A novel approach to measure performance marked by new KPIs & SLAs

Software-defined tools and technologies to go virtual and on cloud.

Convergence of IT and Networks organizations

Pipeline-driven processes and micro services to enable unprecedented service velocity

Culture shift and upskill to embrace the DevOps model

Global vertical ecosystem management

Horizontal multi-party resource management
Get ready for your 5G transformation, today!

Define your target position and manage your ecosystem

- Evaluate where you want to be and whom to collaborate with
- Develop joint opportunities with vertical industries

Establish horizontal platform, leverage SDN/NFV capabilities

- Develop SDN/NFV capabilities and a solid DevOps culture
- Couple with horizontal platform approach
- Establish control points

Move fast and prototype the new target model

- Several use cases can run on a 4G platform
- Adopt start-up approach through spin-offs to move fast and be flexible
- Attain talent for the new
Accenture Network brings together our Digital, Analytics, Cloud and IT capabilities, to support Service Providers to be the new Digital Integrated Service Providers

5 Core Offering areas
(Digital & Analytics based)

- Accenture has supported a Large NA Operator to build its Infrastructure developing community OpenStack extensions to match telco grade challenges
- Accenture owned the development, automated deployment, integration and delivery of Infrastructure Management based on Openstack
- DevOps enablement journey

- Accenture is supporting a Canadian Operator to develop the SDN business transformation for SME and Enterprise segment through a turnkey ‘Network as a Service’ (NaaS) go to market solution
- Solution includes build activities, NaaS Application Development and maintenance and support centre (Tier 2 and Tier 3)

650,000+
Complex provisioning orders completed monthly

- NFV Sites Rollout: 2 NFVI Sites E2E delivery
- VNF On boarding: 4 VNFs already on boarded +8 VNF planned for 2016
- Operating Model & People transformation toward DevOps (>10 processes and >30 people re-trained)

230+
Business advisors in our Global Delivery Network

- Accenture is supporting a East European Global Telco OpCo to realize
  - design and rollout of NFV Infrastructure (HP Infrastructure and Vmware)
  - VNF Onboarding in the area of vIMS to launch VoLTE Services (vTAS, vIMS, ...)

Copyright © 2016 Accenture All rights reserved.
Thank you for your attention!