



# Possibilities

#CiscoLive

# Telco cloud

Your secret to a faster, smarter 5G network

Omar Sultan, Leader – NSO Product Management

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DGTL-BRKSPM-2015



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# Agenda

- What is a telco cloud
- How do I build one?
- How can Cisco help me?

The background is a dark blue field filled with numerous small, semi-transparent squares and dots in various colors including light blue, green, yellow, orange, and red. These elements are scattered across the frame, with a higher concentration of orange and red squares forming a diagonal streak from the top right towards the bottom right.

What is telco cloud?

# 5G is a forcing function

- 5G-driven consumer and enterprise services represent significant opportunity to raise ARPU
- 5G will amplify current strengths and weaknesses
- Incremental fixes may not be a viable approach

## TELSTRA CLAIMS 5G HYPE NOT WRONG

Chinese carriers could jointly build 5G networks to address cost, weak market

## T-Mobile and Sprint 'stuck our necks out' for 5G, exec says

## BT touts 5G advantages for SMEs

AT&T launching 5G-powered 'fan experiences' at AT&T Stadium for Cowboys opener

# What is telco cloud?

Application of cloud principles to build a service delivery platform

**Cloud**  
Rate of innovation  
Cost structure  
Responsiveness  
Observability & SRE



**Telco**  
SLAs and service assurance  
Monetizable services  
Policy compliance  
Change management

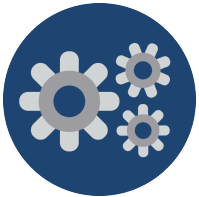
# Telco cloud addresses current challenges



Fundamentally re-work cost structure to compete, improve profitability and free capital for growth initiatives



Improve pace of service innovation and make it easier to embrace disruptive partners and technologies



Emerging service architectures with elements dispersed from the cloud to the edge demand an new approach to infrastructure

# The advent of multi-cloud services

- Build services from a wider variety of components:
  - Cost optimized
  - Specific functions or capabilities
  - Geographic location/footprint
- Initial wave of Telco/CSP partnerships
  - AT&T+IBM
  - Jio+MSFT
  - Altice+AWS



## AT&T on multi-cloud strategy and why it's important for 5G

Sean Kinney, Editor in Chief • September 3, 2019

### Cloud underlies NFV, SDN and automation capabilities

On the heels of a series of cloud-related announcements, AT&T's Chris Rice, senior vice president of network cloud and infrastructure, pulled the lens back and explained the company's larger strategy around cloud computing, automating network management processes and how that relates to 5G.



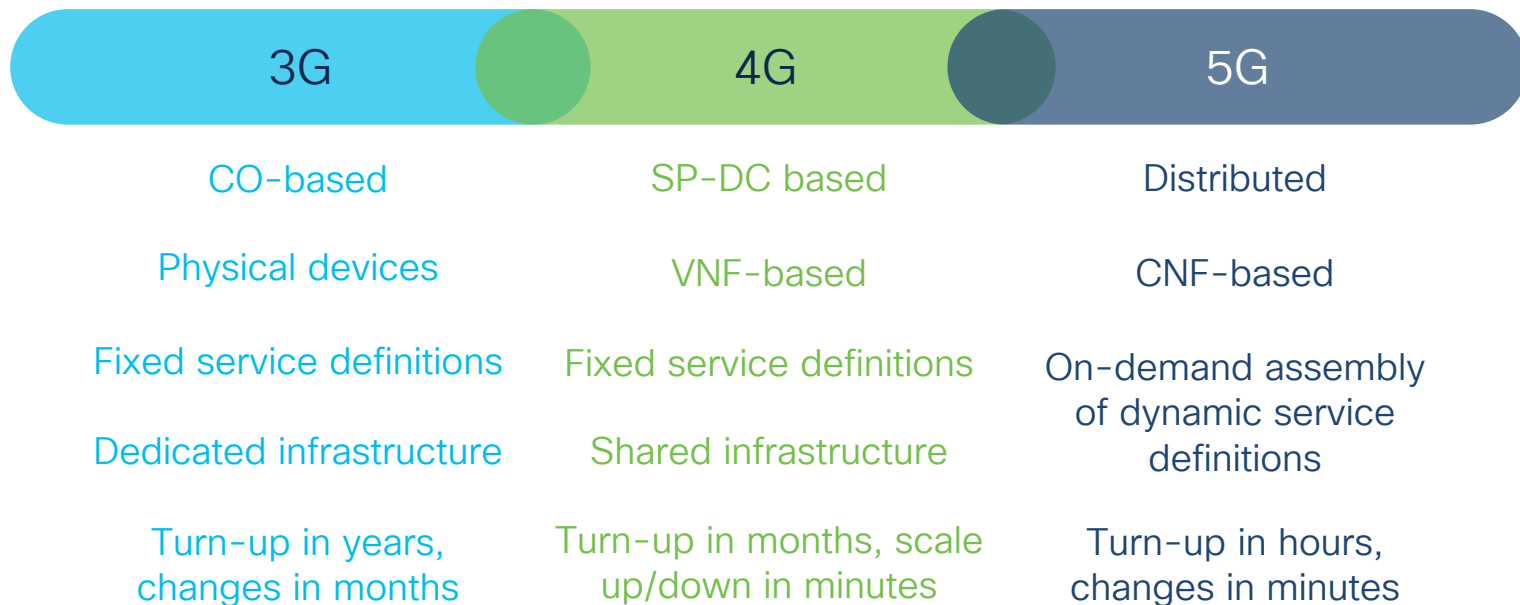
# Ushering in groundbreaking services

- Multi-cloud sets up a new wave of innovation
- Create services and enable business that could not exist before
- Example: Uber could not have existed without the smartphone as a platform



# Building telco cloud

# Next evolution of SP service infrastructure



# Areas your strategy must address

## Integration complexity

Time, costs and risks of acting as an SI to assess, assemble, integrate service delivery stack

Initial and on-going testing and validation

## Service creation

Designing, building and maintain a CI/CD pipeline across service development and infrastructure operations teams

## Operational readiness

Tooling and instrumentation for observability and analytics

SRE-style skill sets

Org alignment and adherence to CI/CD and DevOps processes

# Telco cloud first principles

## Automated processes

Speed and efficiency through operations built around machine-to-machine interaction and consistent and pervasive data models

## Fungible resources

Flexibility and simplicity from interchangeable building blocks that can be aggregated and distributed as needed

## Distributed capabilities

Simplicity and agility from a consistent operational environment that spans from core to edge

## Programmable infrastructure

Improved customer experience through loosely coupling service creation and service delivery

## Evolved operations

Upgraded organizational capabilities related to planning/design, change management, problem resolution



On to part 2...

# Telco cloud – Part 2

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# Building blocks for telco cloud

## Infrastructure

- Data center networking and optics
- COTS and cloud infrastructure
- Storage
- Physical and virtual infrastructure management

## Automation

- Network automation, physical and virtual (NFVO + VNFM )
- Service chain orchestration
- Cross domain and multi-vendor automation
- Closed loop lifecycle

## Services

- Support across entire lifecycle of project
- Tailored solutions
- Augment your operational capabilities and reduce time-to-value

## Software

- Virtual and containerized network functions
- Control plane/data plane scaling/separation
- Domain specific controllers
- Monitoring and visibility
- Security across all layers



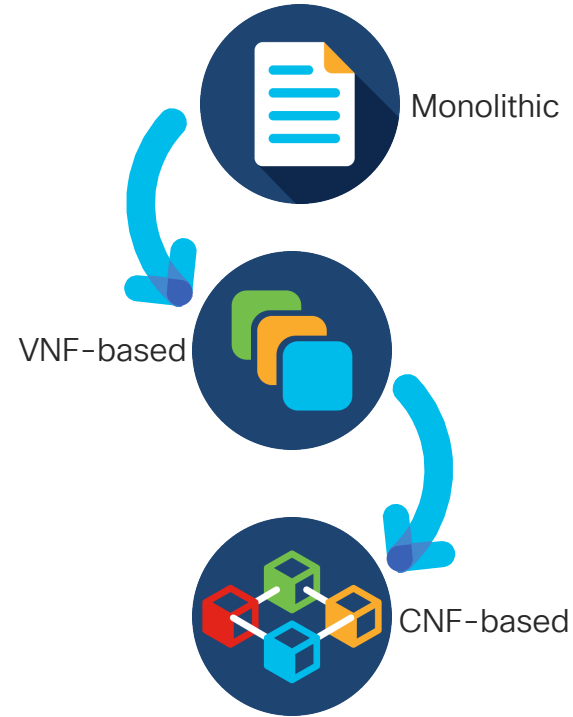
# New service chain: distributed, uniform, automated



- Network functions and resources deployed anywhere
- Cross domain, end-to-end service orchestration for predictable deployment and lifecycle management
- Centralized, end-to-end monitoring of infrastructure and services
- Abstracted infrastructure layer for service developers/owners

# Single platform to accommodate service evolution

- Built with the recognition there is on-going evolution of how services are built
- Migration will take time and most operators will run in a mixed mode for years
- Platform can support any mix of virtualized services as well as automate and orchestrate physical network functions



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Where Cisco can help

# Cisco building blocks for telco cloud

## Infrastructure

- Integrated “easy button” stacks and components
- Routing, DC switching, optical + optics, compute, and edge infra
- vRAN ecosystem
- Cloud infra partnerships

## Automation

- Network services orchestrator
- ACI
- Crosswork
- Automation ecosystem

## Services

- CX lifecycle services
- Partner services

## Software

- Virtual and containerized network functions
- Monitoring, visibility and planning
- Workload management
- IoT management
- Security

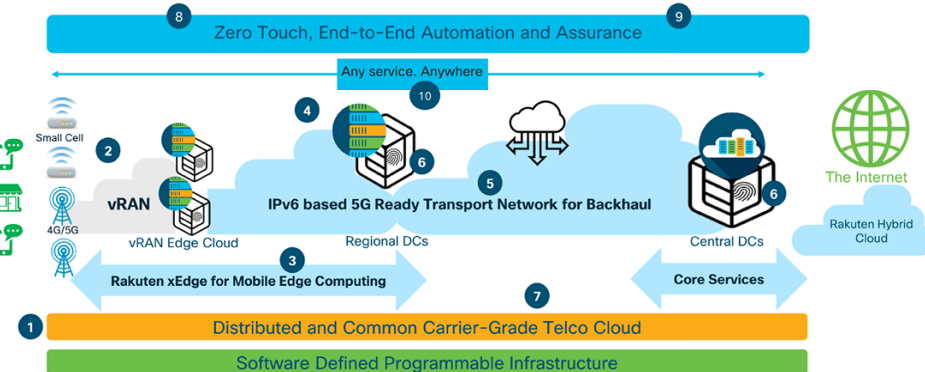


## Blog

<https://blogs.cisco.com/sp/rakuten-cloud-platform-is-a-blueprint-for-the-future>

## Video

<https://video.cisco.com/video/6006839872001>



# Summary



This is a doable: get the technology in the lab and play with it



Learn from leaders like Rakuten but don't copy/paste



Big plans, but small steps – incremental and consistent cadence

# SPM Sessions – June Release

Session ID	Session Title	Availability
DGTL- BRKSPM-2010	Applying Security in a 5G World	June 18th 2020
DGTL- BRKSPM-2013	Next-Generation Mobile Enterprise: 5G, Private LTE, and Wifi 6	June 18th 2020
DGTL- BRKSPM-2071	5G Technology Updates	June 18th 2020

# SPM Sessions – July Release

Session ID	Session Title	Availability
DGTL- BRKSPM-2001	Accelerate Mobility deployment with Cisco Cloud Services Stack	July 15th 2020
DGTL- BRKSPM-2009	Design 5G Ready Distributed Telco DC with Cisco ACI	July 15th 2020
DGTL- BRKSPM-2016	5G network with SD-WAN for Enterprise Customers	July 15th 2020
DGTL- BRKSPM-2020	5G Mobile Edge Computing	July 15th 2020
DGTL- BRKSPM-2129	Deploying 5G and LTE for Enterprise and IoT	July 15th 2020
DGTL- BRKSPM-2950	Rakuten Mobile: All in the Cloud from RAN to Core	July 15th 2020



# SPM Sessions – September Release

Session ID	Session Title	Availability
DGTL- BRKSPM-2002	5G CICD with Continuous Deployment & Automation Framework	Sep 9th 2020
DGTL- BRKSPM-2015	Telco Cloud: your secret to a faster, smarter 5G network	Sep 9th 2020
DGTL- BRKSPM-2021	5G Enterprise Core Design in Industry Verticals	Sep 9th 2020
DGTL- BRKSPM-2023	Sprint Scalable Cloud with Cisco VIM	Sep 9th 2020
DGTL- BRKSPM-2784	5G Cloud Native Deployment With Cisco VIM	Sep 9th 2020

Thank you



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