Digital Transformation for Modern Service Providers

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Introducing Dell Technologies

Technology powerhouse by combining our industry-leading capabilities and global expertise
Dell Technologies is a Service Provider

Delivers cloud, managed, hosting and consumer webtech services

Cloud Service Provider

VMware vCloud® Air
virtustream

Webtech Service Provider

Managed/Hosting Service Provider

DELL EMC
Pivotal
SecureWorks
RSA
Growing Service Provider Customer Base

Communications Service Provider
- verizon
- SK telecom
- SaskTel
- LG U+
- COX

Cloud Service Provider
- at&t
- proximus
- vistara
- KDDI
- LunaCloud
- Orange Business Services
- Colt
- cloud shape
- InvestorCOM
- Swisscom
- Bell
- Audience Science

Consumer Webtech Service Provider
- Aol.
- bing maps
- NEXON
- intuit
- Xianbao

Managed/Hosting Service Provider
- xerox
- Datapipe
- Ascenty
- Deutche Telekom
- GMO Internet Group
- Solicity
Service Provider
Digital Transformation & Modernization
Service Providers at a Crossroads

1. **New architectures and technologies**
   changing the velocity, ease, and economics of service creation and delivery

2. **New services and business models**
   designed to harness the ‘always-on, instant-access’ device experience.

3. **New competitive landscape**
   challenging the status quo of connectivity and service offerings.
Business Challenges

Growing CAPEX and OPEX for existing data centers

Long time to market for new or updated services

Slowing growth & innovation

Driving up CAPEX & OPEX

Driving down profitability

Driving down Revenue growth

Driving up TIME TO MARKET

COST
Two-Sided Business Model

**Downstream**
- Consumers
- Enterprises
- "Cloud" Services
- User Experience
- Applications
- Infrastructure

**Service Provider**

**Service Exposure Layer (APIs)**

**Revenue:** Subscriptions + Download + Services + Advertising

**Upstream**
- Content Providers
- App Developers
- Advertisers
- Vertical Industry Partners
Solutions Designed For Your Business

Delivering cutting-edge innovation to service providers globally

- Delivering a superior long-term value
- Democratizing technology for the benefit of all

- Driving out inefficiency everywhere
- Cost
- Complexity
Digital Transformation is Happening Now

**Last 15 years**
- IT-centric
- Systems of record
- Traditional applications
- Transactional data and reporting
- Internet

**Next 15 years**
- Business-centric
- Systems of engagement and insight
- Cloud-native apps
- Streams of data and analytics
- Internet of Everything
Focus on Optimizing Traditional Applications

IT INVESTMENTS $

TIME

2000 2030

Traditional applications

“Optimize” mode
IT transformation

2015: $2.7 Trillion
Focus on Optimizing Traditional Applications

"Optimize" mode
IT transformation

"Invest" mode
Digital transformation

Strategic partnerships matter

Traditional applications

Cloud-native applications

TIME

IT INVESTMENTS $

2000

2030
Dell EMC’s Modernization Portfolio

Traditional

Client-server
scale-up apps

Infrastructure
resiliency

ITIL-based
IT processes

Coexisting IT paradigms

Cloud-native

Distributed
scale-out apps

Application
resiliency

DevOps based
IT processes

Traditional

Coexisting IT paradigms

Cloud-native
Digital Transformation & Modernization

Modernize infrastructure; Re-host, virtualize, automate & digitize network functions, services & processes

Re-host & virtualize IT functions & services

Mobile
IoT
Home
Branch/Small Office
Enterprise

4G/5G
IoT Fog
DSL
Cable
Ethernet

Communications Service Provider

Communications Service Provider

Communications Service Provider

Enterprise & SMB managed/hosted IT & cloud services

Enterprise & SMB XaaS cloud-native & hosted cloud services

Unstaffed PoP
Central Office/Head-End
Regional Data Center
Hyperscale Data Center

New consumer and B2B business models & routes to market
Dell EMC Solutions for Modern Service Providers
Dell EMC Service Provider Solutions

SP Solutions Portfolio

1. Service Provider Cloud Infrastructure
2. Infrastructure Modernization (NFV, Multi-Cloud)
3. Workspace Modernization (DaaS, MDM-aaS)
4. Platform Modernization (Cloud-Native/PaaS, OSS/BSS, VNF)
Dell EMC Service Provider Cloud Infrastructure

Service Provider Workloads
- Telco/NFV
- Consumer/Social
- IoT/Emerging
- XaaS
- Managed/Hosted

Dell EMC Service Provider Cloud Infrastructure

Cloud Infrastructure Software
- Virtualization
- Orchestration
- Automation
- Analytics
- Security
- Cloud Services

Cloud Infrastructure Hardware
- Dell EMC Compute
- Dell EMC Storage
- Dell EMC Networking

Compute-centric
Cloud-scale
Open, Standards-based
Future-ready
Dell EMC Advantage

**Open Architectures**
Maximum choice, flexibility and investment protection, without forklift upgrades

**Modern Portfolio**
Modern systems and technologies no vested interest in legacy systems

**Modular Systems**
Open building blocks enabling mix-and-match interoperability up and down the stack

**Scalable Solutions**
Systems tailored to your workloads and designed to grow with your business
100% Open and Standards-based

Dell EMC Service Provider Cloud Infrastructure

- Virtualization
- Orchestration
- Automation
- Analytics
- Security
- Cloud Services

Cloud Infrastructure Software

Cloud Infrastructure Hardware

- The Linux Foundation
- Open Compute Project
- Open Networking Foundation
- OpenStack
- OPNFV

- Maximum interoperability
- Maximum manageability
- Maximum investment protection
Scalable in Any Direction

Dell EMC Service Provider Cloud Infrastructure

Cloud Infrastructure Software
- Virtualization
- Orchestration
- Automation
- Analytics
- Security
- Cloud Services

Cloud Infrastructure Hardware

CPE  Unstaffed PoP  Central Office  IP Point of Presence  Regional DC  Hyperscale DC

Service Density

Platform Scale

$10^5$  $10^4$  $10^3$  $10^2$  $10^1$  $10^0$
Dell EMC Service Provider Solutions GTM Models

Workloads

Cloud Platforms: Virtualization Orchestration Automation/Mgmt

Infrastructure Hardware

Open Ecosystem

Validated Cloud Infrastructure

NFV Reference Architectures
Open Cloud Infrastructure Partner Ecosystem

Cloud Infrastructure Hardware
- PowerEdge
- ScaleIO
- ECS
- Xilinx
- Intel
- OS9 | OS10 | Open Networking

Cloud Infrastructure Software
- VMware
- Red Hat
- Oracle
- Microsoft
- Canonical
- Pivotal
- Chef
- CRAN
- Symantec
- RSA
- VirtuStream

Cloud Services
- Orchestration
- Automation
- Analytics
- Security

Open and choice

Dell EMC
Service Provider
Cloud Infrastructure
Dell EMC + Red Hat
Service Provider Solutions
Dell EMC + Red Hat Cloud Infrastructure Platform

Service Provider Workloads

Dell EMC + Red Hat Service Provider Cloud Infrastructure

Cloud Infrastructure Software

Cloud Infrastructure Hardware
Dell EMC + Red Hat NFV Solution

Dell EMC + Red Hat NFV Infrastructure

Virtualization Layer

Hardware Resources

✓ Integrated Validated System ✓ Open-Source Community ✓ Future-Ready

NFV MANO

- NFV Orchestrator
- VNF Manager
- Virtualized Infrastructure Manager

NFV FCAPS

- Operations Management
Customer Success: Industry’s Largest NFV Deployment

Verizon launches industry-leading large OpenStack NFV deployment

Verizon collaboration with Big Switch Networks, Dell and Red Hat advances open source knowledge; Companies to discuss project at the OpenStack Summit in Austin

AUSTIN, Texas – Verizon has completed the industry’s largest known Network Function Virtualization OpenStack cloud deployment across five of its U.S. data centers.

Open Architecture Platform

47% Lower overall TCO over 5 years

3x Service agility advantage for new service enablement

65% Lower cost to new service enablement

Source: 2017 ACG Research commissioned by Dell EMC & partners.
Take the Next Steps with Dell EMC

1. Engage with our executives and engineers
2. Request a workshop and technical deep-dive
3. Customize your own proof-of-concept