100,000% increase in data traffic on AT&T national wireless network

RETHINKING THE NETWORK

Specialized Hardware

Flexible Software

Faster
Highly Secure
Cheaper
Agile
Easier to Scale
More Reliable
More Flexible

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75% of our network using cloud infrastructure and SDN

By 2020
AT&T Domain 2.0 Transformation Imperatives

**Open our Network**
- Modular
- Programmable via robust Network API’s, service creation and execution

**Simplify and Scale**
- Common NFV Infrastructure
- New operational paradigms
- Emergent significant stressors include Video and Internet of Everything

**Increase Value**
- Agile, Elastic, Dynamic
- Cost-Performance leadership
- Enable new growth services & apps
- World class, industry-leading security, performance, reliability
- Facilitate new business models and associated monetization paradigms

**Architecture and Technology Directions**
- Decouple HW from SW – NFV
- Separate Control from Forwarding – SDN
- Combining NFV and SDN, enables a real time network cloud, distributed and integrated through the WAN, optimized for packet

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D2.0 – Framework

Real-time, Agile Customer Enablement

Improved Efficiency, Reduced Cycle Times, Innovative Services & Apps, Faster

AT&T Integrated Cloud (AIC) : Shared, Common, Homogeneous

NFV  ECOMP  SDN

AT&T Internal Transformation - People, Process, Culture

New Paradigms for AT&T and the Telecommunications Industry
NFV, SDN, eCOMP

**Virtualize**
- Convert Physical to Virtual (NFV)
- AT&T Integrated Cloud

**Control**
- SDN Controller
- Enable Software Control (SDN)

**Operate**
- Control
- Policy
- Orchestrate
- Management
- Plug into D2 Ops Framework (eCOMP)
Transformation: Converging to single, common infrastructure

AT&T Integrated Cloud

Beginning
- Disparate Platforms & Operations
- Workload Silo Dependencies

Convergence
- Single, Homogeneous Platform & Operation - Supporting All Workloads
- Intense Automation & Simplification

Expansion
- Grow with Demand
- Expand Metro, Edge & Access

100’s to 1000’s
SDN for Service Providers – Open Source Approaches

It’s Your Choice!

The Traditional Approach

- Develop concept within the company
- Staff and fund standardization for new protocols, network elements, and software
- Wait 5-6 years for standards to complete
- Wait half a year for compliant equipment
- Write RFPs that reference standards and include fixes and patches to bring solution forward 6 years
- Do 6 months of integration and lab testing
- Develop OSS/BSS system to productize and go to market
- It’s been 8 years and you’re locked-in to the solution, suppliers - even SDOs

The Open Source / Community Approach

- Pick a community with like concerns and a common culture and collaborate toward a public beta
- Learn what was right/wrong, and leverage devops to continually improve the service
- Use your revenue to pick a new idea to bring to market in the second half of the year
Open Source will influence all aspects of SDN/NFV
Summary: Open Source Software Define an obvious choice for D2

D2 Open Source Technology perspectives:
Community, Quality, Additivity to Commodity HW, Choice, Agility / De-facto standard, Performance, Transparency and rapid innovation.

D2 Open Source Business perspectives:
Our customers cannot wait months or years
Eliminate complexity in **Operation** and achieve increased simplicity in much less time
Deploy self service portals for our consumers and enterprise users that are adaptive, simple, and fun
OPEN
FAST
SIMPLE at SCALE
SECURE

THANK YOU!