Real-time OSS approach

https://www.brighttalk.com/webcast/10303/90411

Axel Clauberg VP, Aggregation, Transport, IP (CTO-ATI) & Fixed Access (CTO-FIA) Deutsche Telekom, Håkan Millroth CTO Tail-f S

In this dynamic webinar you'll hear from Axel Clauberg, who is responsible for Deutsche Telekom's IP Architecture and Designs for fixed and mobile networks. Mr. Clauberg is an outspoken advocate for the standardization of real-time OSS, and will reveal critical information for Network Equipment Providers, Service Providers and Systems Integrators. This webinar will demonstrate the importance of leveraging IETF standards of NETCONF and YANG, which can provide enormous cost savings, innovation benefits and vendor flexibility for Service Providers.

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Technology for Service Providers.

KnowledgeCast Webinar

A Realtime OSS-based SDN Approach

Moderated by:

Jesse Cryderman

Senior Editor, *Pipeline*

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Technology for Service Providers.

Deploying network services is ever more complex

The power of abstraction has now extended to the network itself

NFV: Network Functions Virtualization

SDN: Software Defined Networking

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Technology for Service Providers.

Presenters

Axel Clauberg
VP Aggregation, Transport, IP (CTO-ATI) & Fixed Access (CTO-FIA)
Deutsche Telekom, AG

Hakan Millroth
CTO
Tail-f Systems

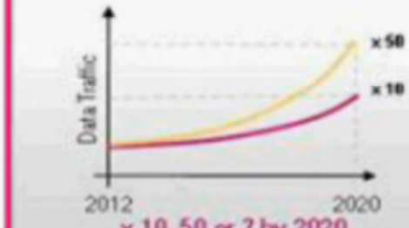
A Realtime OSS-based SDN Approach

Axel Clauberg, VP Aggregation, Transport, IP (CTO-ATI) & Fixed Access (CTO-FIA), Deutsche Telekom AG

LIFE IS FOR SHARING.

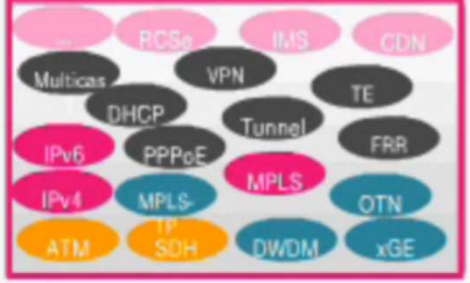
OPERATOR CHALLENGES

Traffic Growth



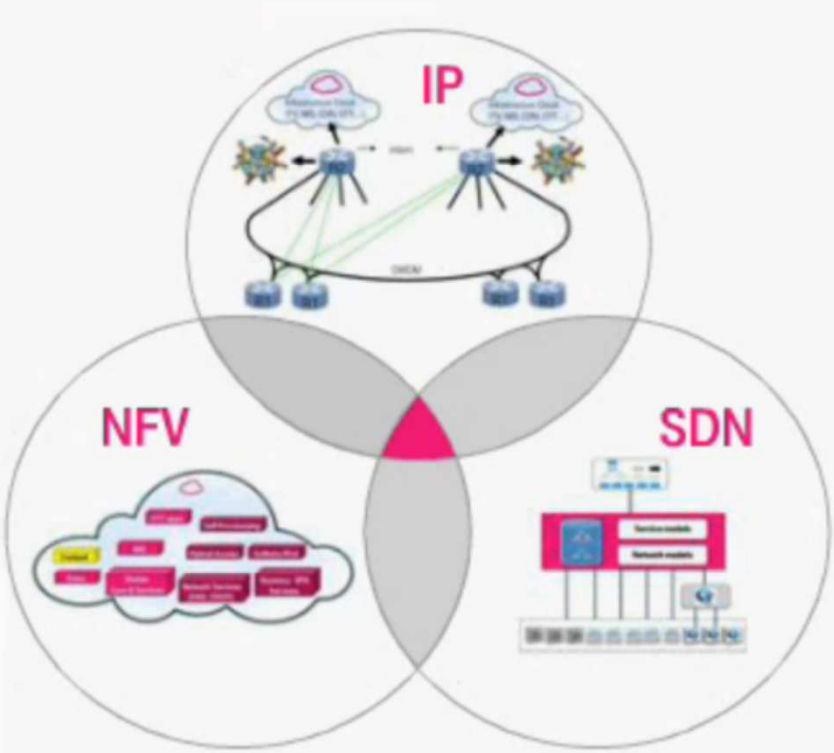
Competitive Pressure

Cost & Complexity



Time to Market

IP Innovation + NFV + SDN
A winning Formula



IP Innovation

- Faster time to market
- Drastic Simplification
- Native IPv6
- IP & Optical

NFV

- Faster time to market
- Elasticity
- Redundancy
- Independence from hardware

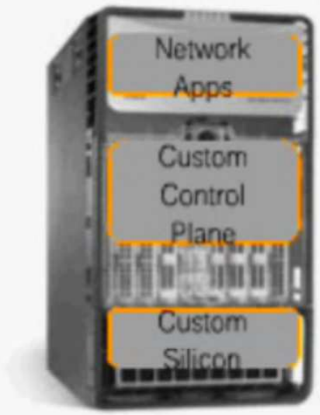
SDN

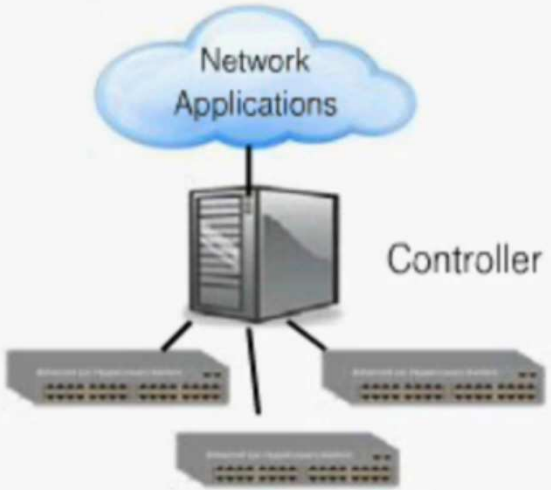
- Faster time to market
- Central Control
- Service and Network Abstraction

SDN – FROM NETWORK MAINFRAMES TO OPEN SYSTEMS

Press Esc to exit full screen mode.

Current network equipment design
monolithic/tightly integrated



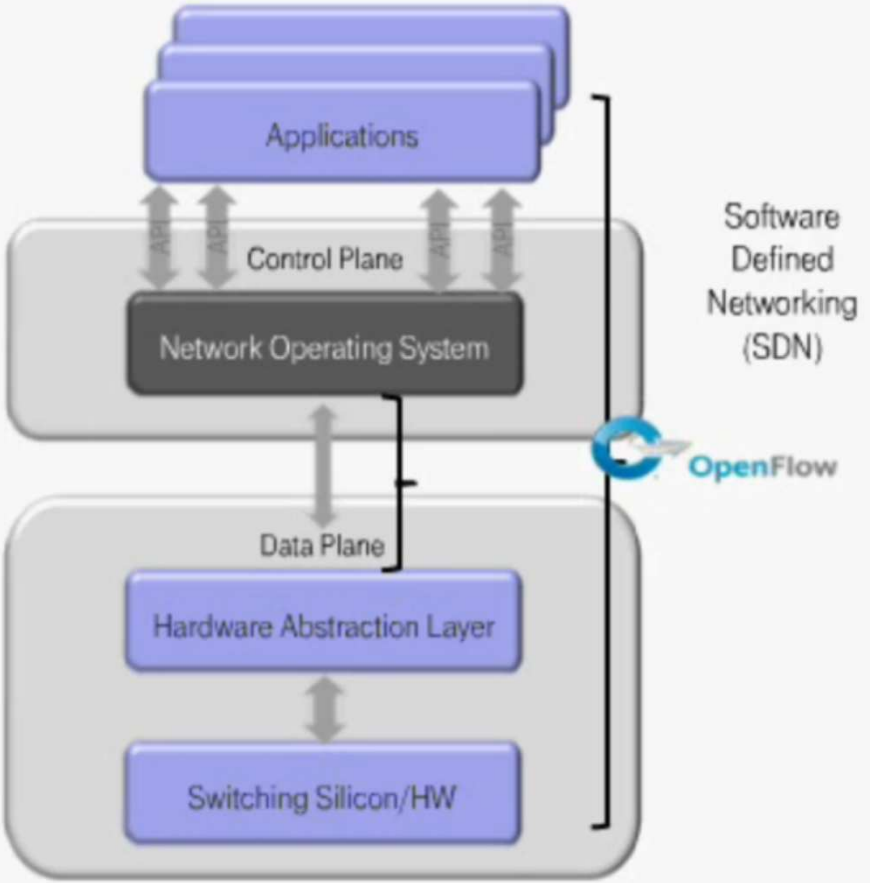


(remember mainframe computers?)

SDN ARCHITECTURE

- Open: multi-vendor interoperability
- Modular: scalable, economical
- Programmable: rapid provisioning of new services
- Abstraction layer: decouple hardware/software

- Open Networking Foundation
  http://www.opennetworking.org



FLEXIBILITY: SHORTEN TIME TO MARKET

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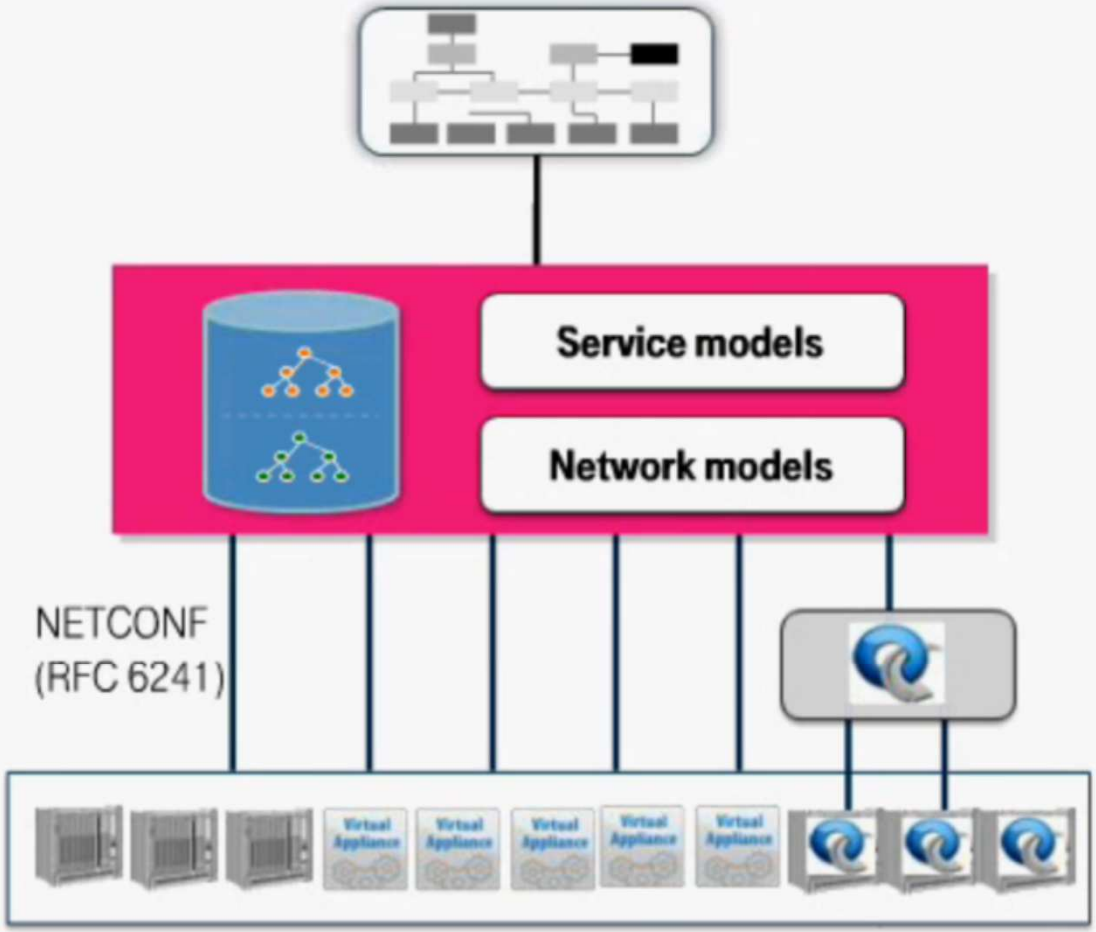
Program services instead of re-architecting the network and the management system for every new service.

Peter Lothberg, Internet Legend

"

TERASTREAM IS DT'S FIRST SDN



Management Applications

Realtime OSS

YANG (RFC 6020)

Multi-Vendor Multi-Technology

What's Needed ?

Focus Areas

- **People / Skills**

  Need new skillset combinations: IP + Datacenter + Programming + Operation

- **Processes**

  From waterfall to agile

  Small empowered teams

- **Standards (IETF)**

  Defining standard YANG datamodels

  Stop the vendor blockade !

THANK YOU!

LIFE IS FOR SHARING.

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Introduction to Tail-f and NCS

Hakan Millroth
CTO

Tail-f Systems At-a-Glance

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- Founded 2005
- 85+ customers world-wide
- Stockholm, Silicon Valley
- Software product company
  - Centralized Network Control - SDN
  - Network Automation
- Target Markets
  - Service Providers
  - Data Centers
  - Network Equipment Vendors

Network Control System (NCS)

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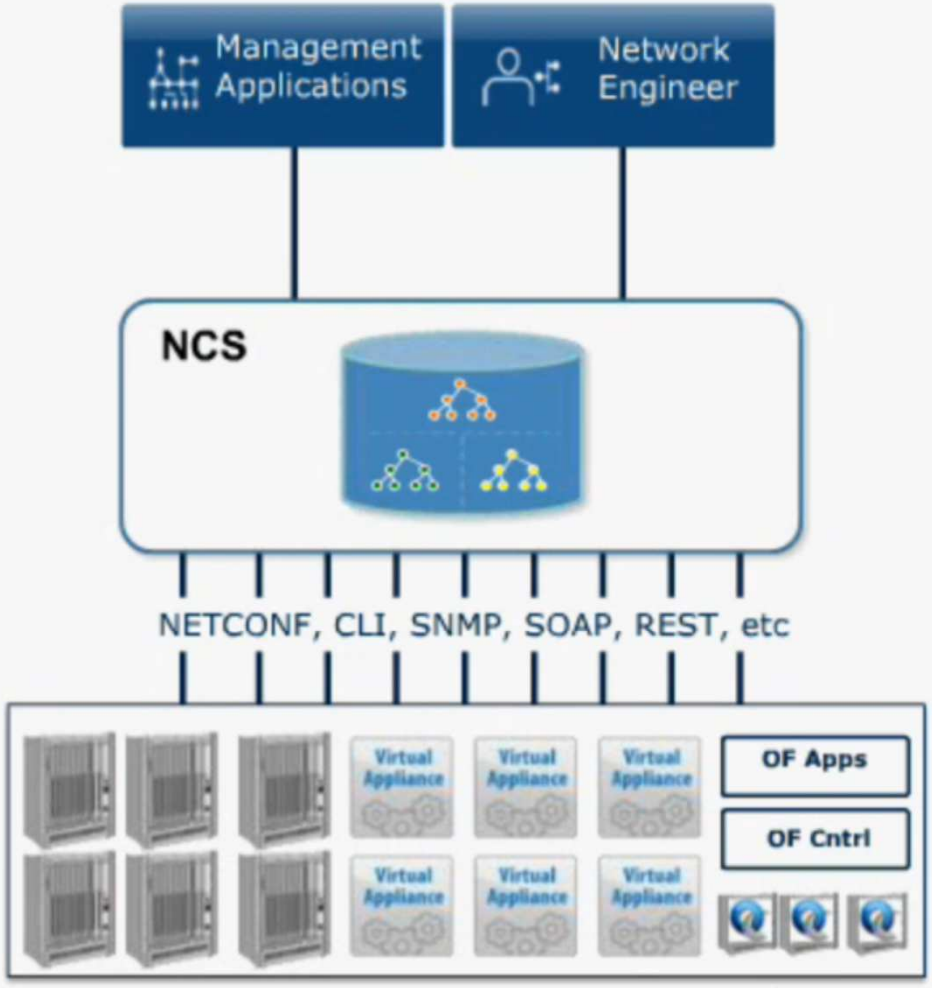

Multi-vendor
service-oriented
SDN controller

Network Control System (NCS)

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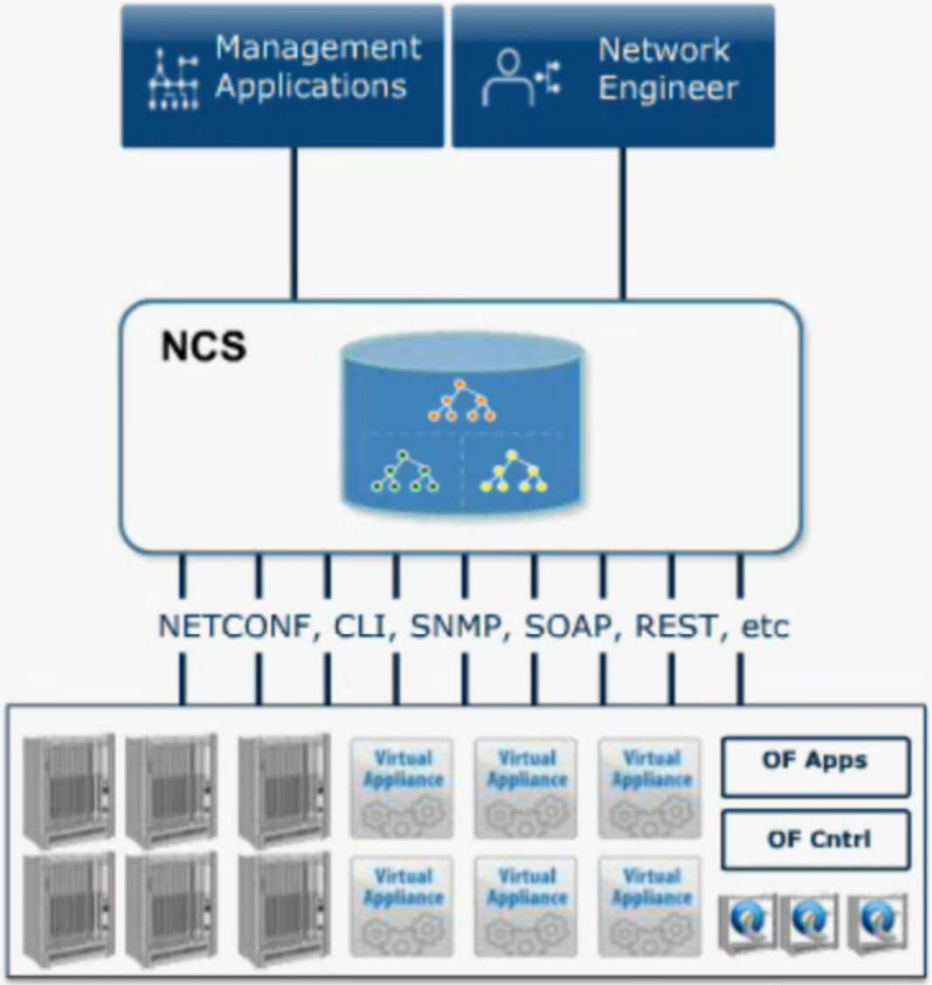

Single Pane of Glass for

- L2-L7 networking
- Hardware devices
- Software devices
- OpenFlow

Use Case : Managed Services for Enterprise Customers

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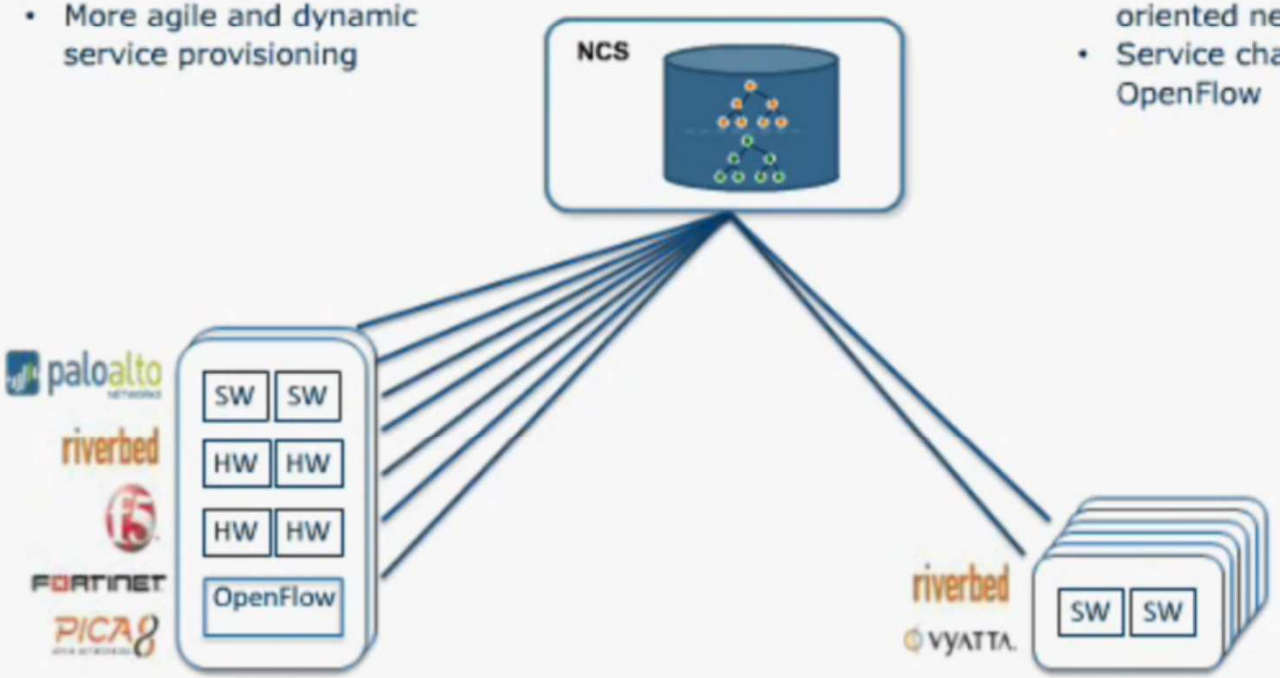
Business drivers:

- Value-added services to enterprise customers
- More agile and dynamic service provisioning

NCS use case:

- Dynamic control of L3-L7 devices using service-oriented network API
- Service chaining using OpenFlow



Datacenters (dozens)

Branches (thousands)

Use Case NSN: Multi-Vendor Mobile Transport

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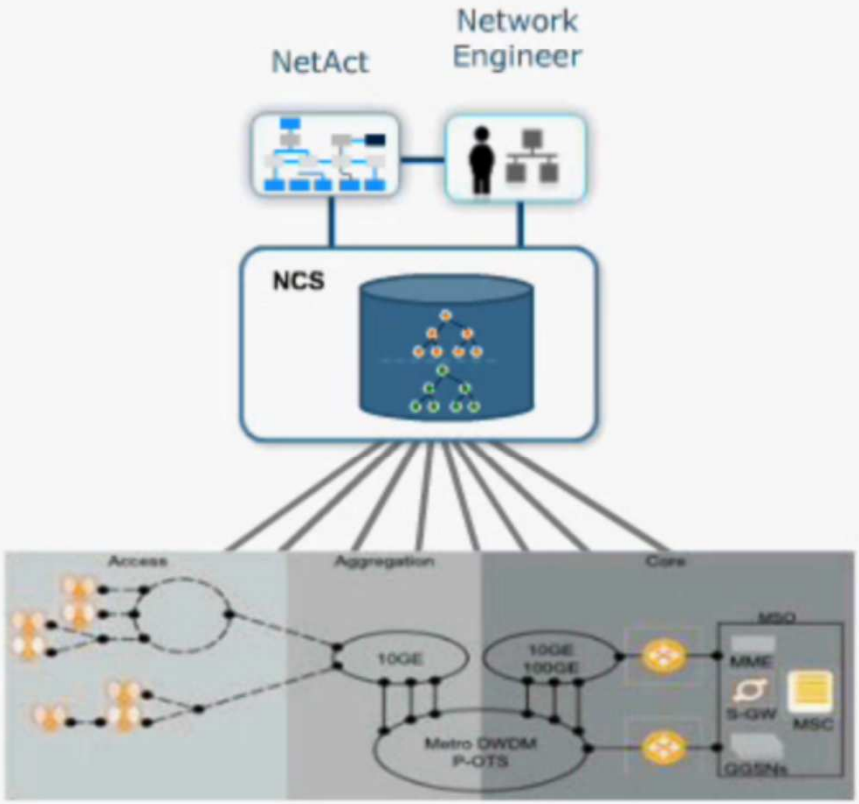
Business driver:
Automation of IP service provisioning in mobile transport networks

NCS use case:
- Provision network services on Cisco and Juniper network elements
- Read/write mediation



Use Case: Datacenter Network Automation

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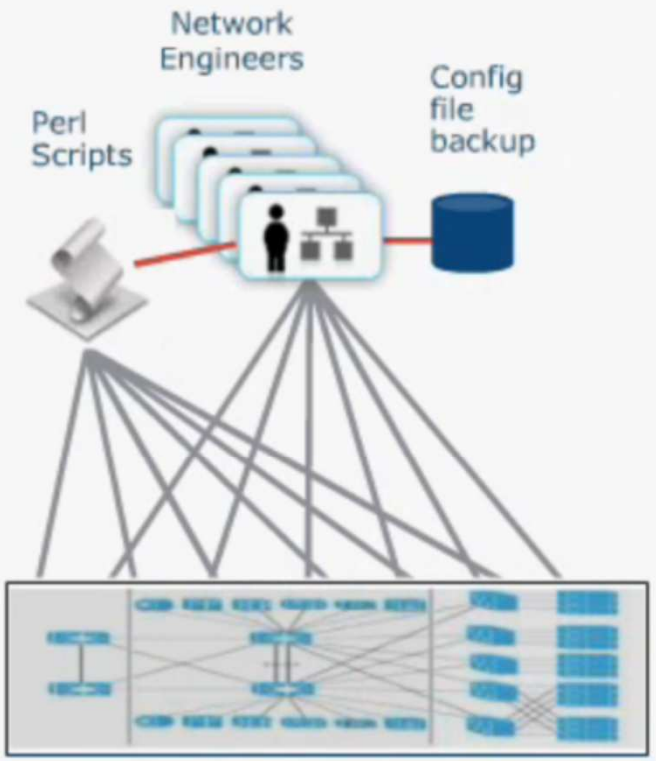
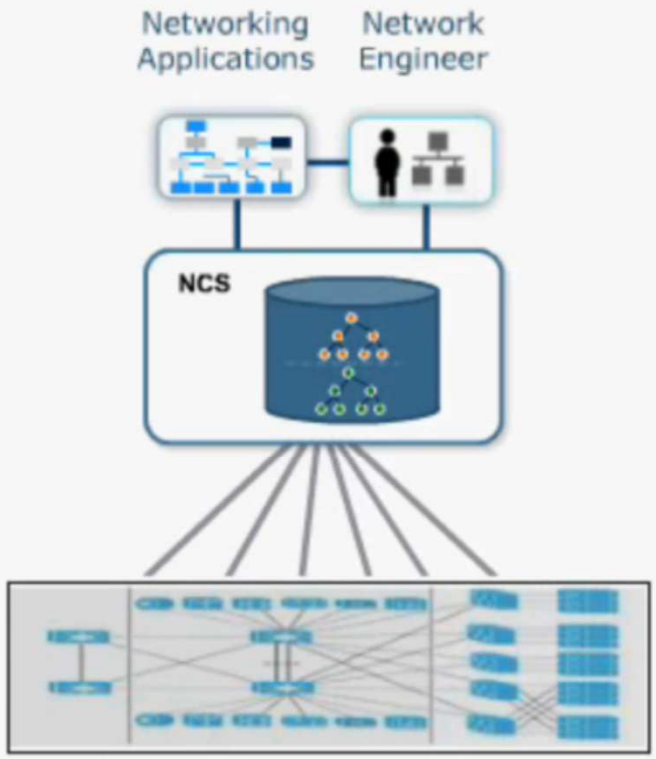
Business driver:
Scaling operations

NCS use case:
Network automation using service-oriented network API





NCS Key Features

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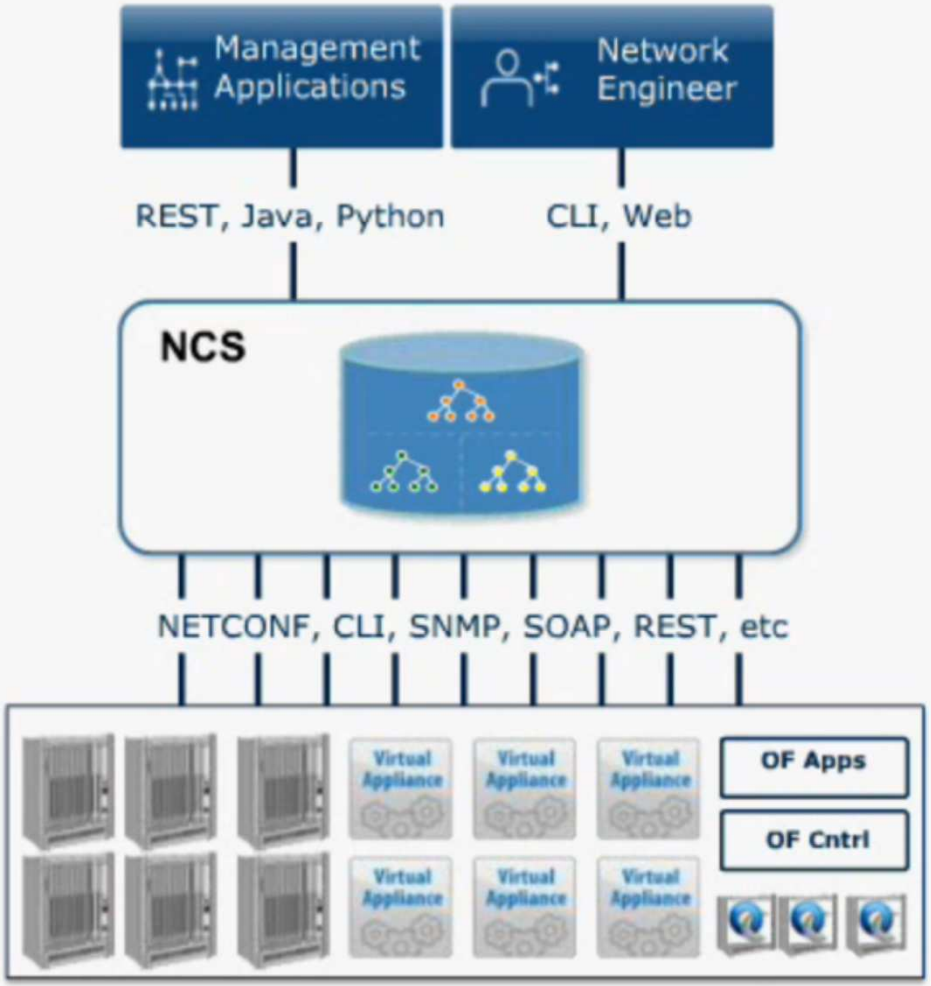

Key features:

- Model-driven architecture
- Transactional guarantees
- Service-to-device mappings
- Operational data mediation

NCS Key Feature: #1 Model-driven architecture

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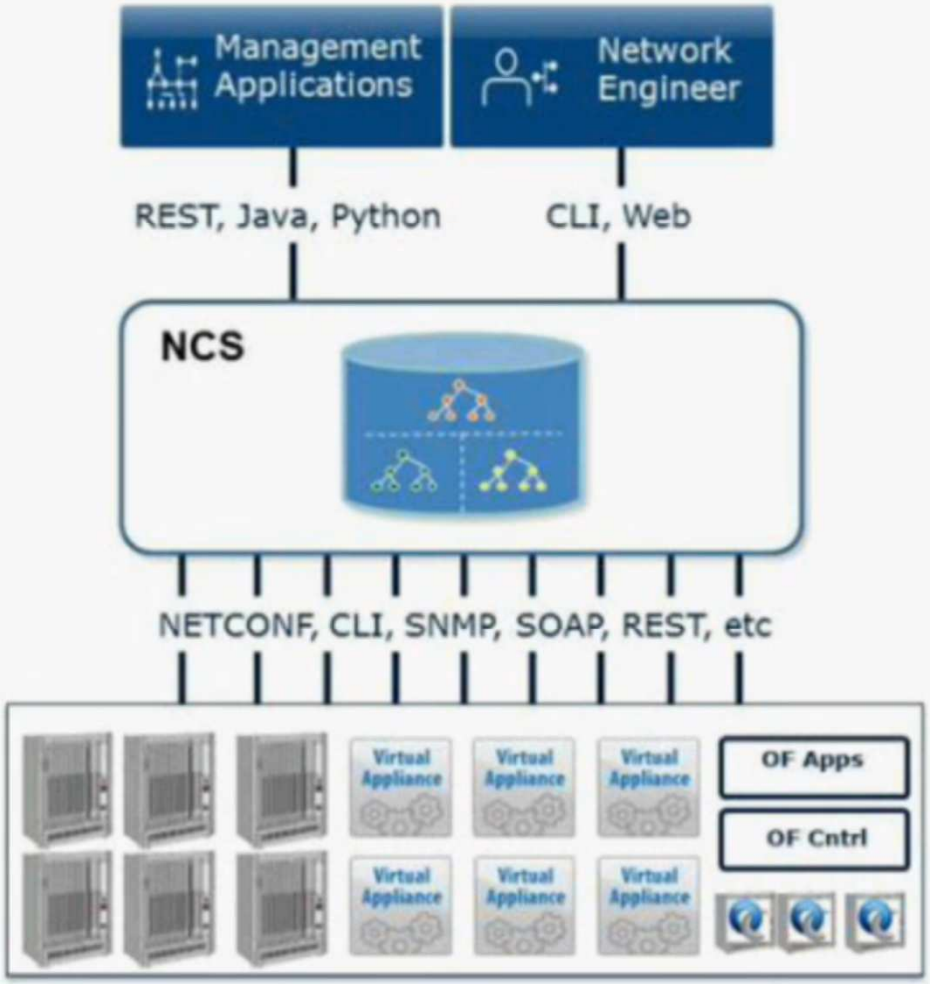

YANG data models for:

- Network services
- Network devices

⇒ No hard-coded information about services or devices

YANG data models drive:

- North-bound APIs
- User interfaces
- South-bound command sequences

NCS Key Feature: #2 Transactional guarantees

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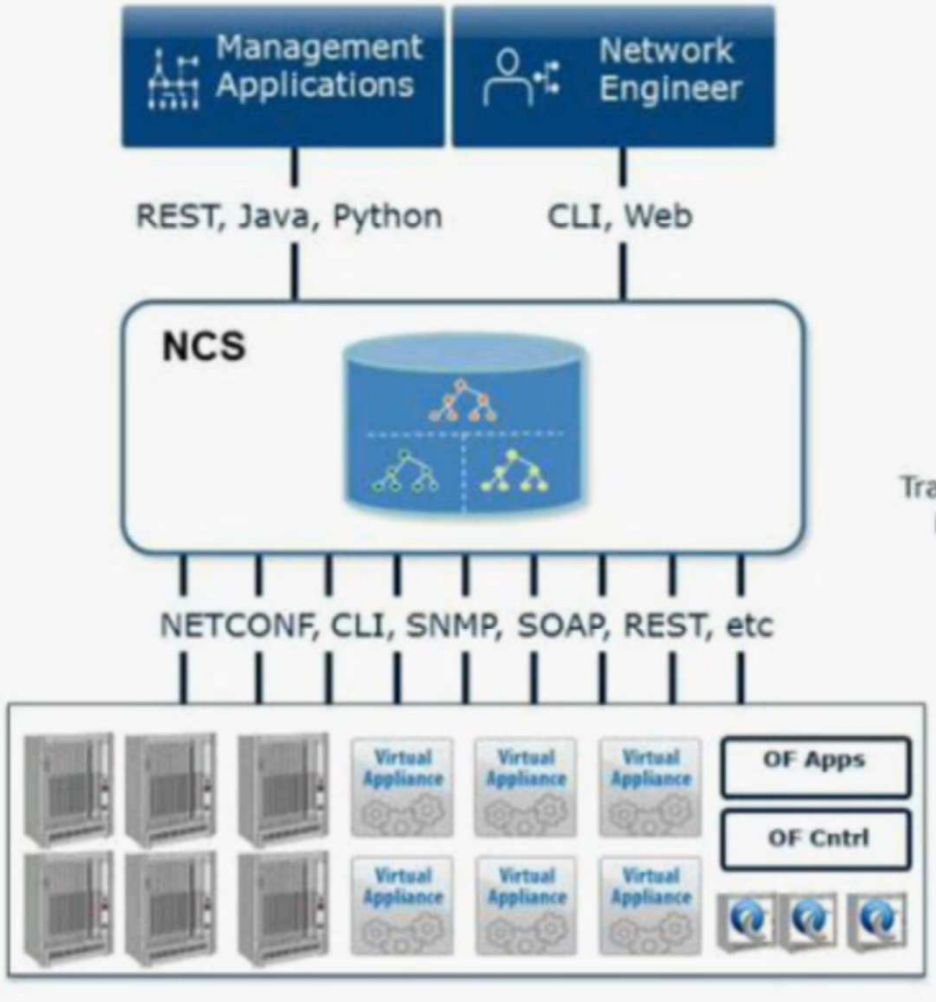
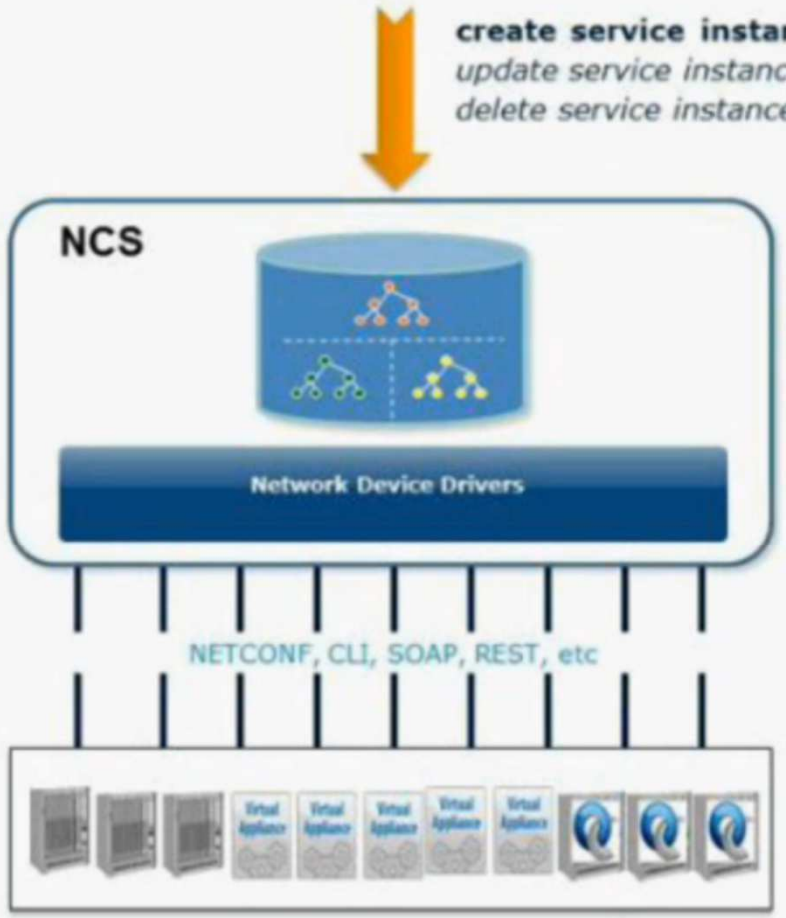


Transactional integrity

- Provide transactional integrity from NCS to the network to ensure fail-safe operations ("atomic change-sets")
- Keep accurate copy of network configuration state in NCS at all times

NCS Key Feature: #3 Service-to-network mappings



Mappings guided by data models:

- Mapping service instance data to device instance data
- Mapping device instance data to device-specific command sequences

NCS Key Feature: #3 Service-to-network mappings (cont'd)

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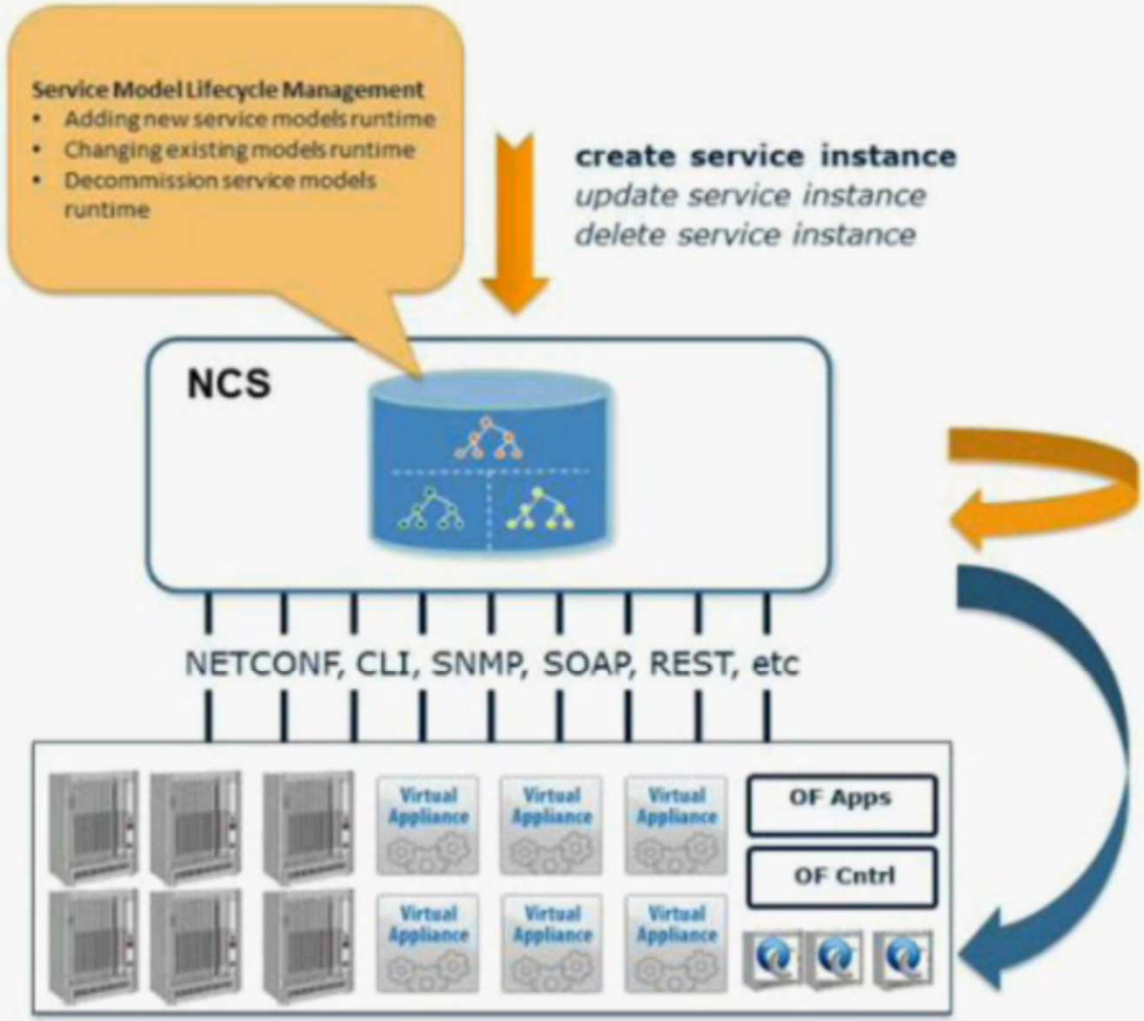

Mappings guided by data models:

- Mapping service instance data to device instance data
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NCS Key Feature: #4 Operational data mediation

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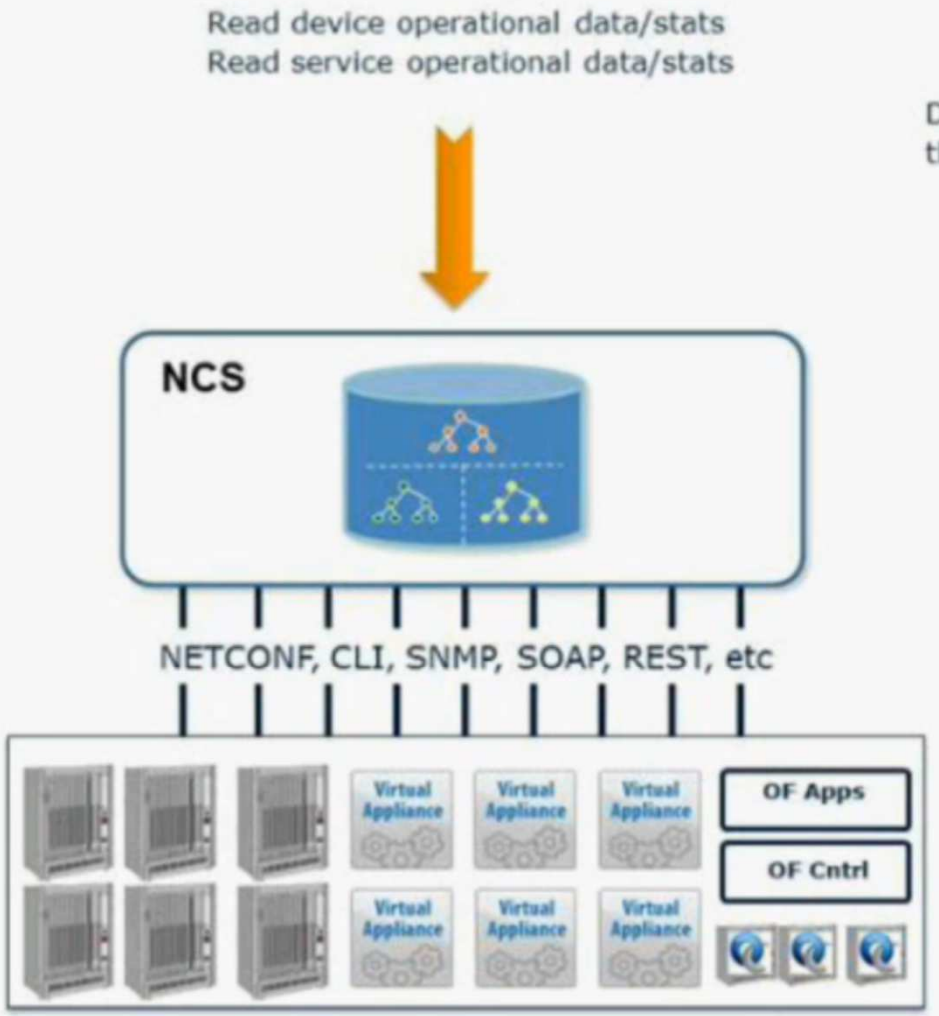

Data models guide how to query the system for operational data

- Mapping device operational data to service operation data
- Collect device operational data and respond in unified format

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KnowledgeCast Webinar

Thank you for attending

A Realtime OSS-based SDN Approach

Questions?

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Webcast, Q&A from 46:00