



Introduction to SDI (Software Defined Infrastructure)

2015.11.20

FI Summit 2015

FIF Test WG

Predictions for the
FUTURE OF THE INTERNET

❖ General Concept of Networkers

SDI

= SDN+NFV+Cloud

= OPNFV (incl. ODL)

Open Platform for Network Functions Virtualization



'Telco SDI' for 5G Mobile Network

❖ "Virtualization First, NFV Second, SDN Third"

PAST

NE Oriented
(eNB, SGW, PGW, MME)

Standard (Only)

Uncontrollable Network

5G

Function Oriented
(eNB & VNFs)

Software APIs (Major)

Controllable Network

❖ OPNFV(Open Platform for NFV) Components

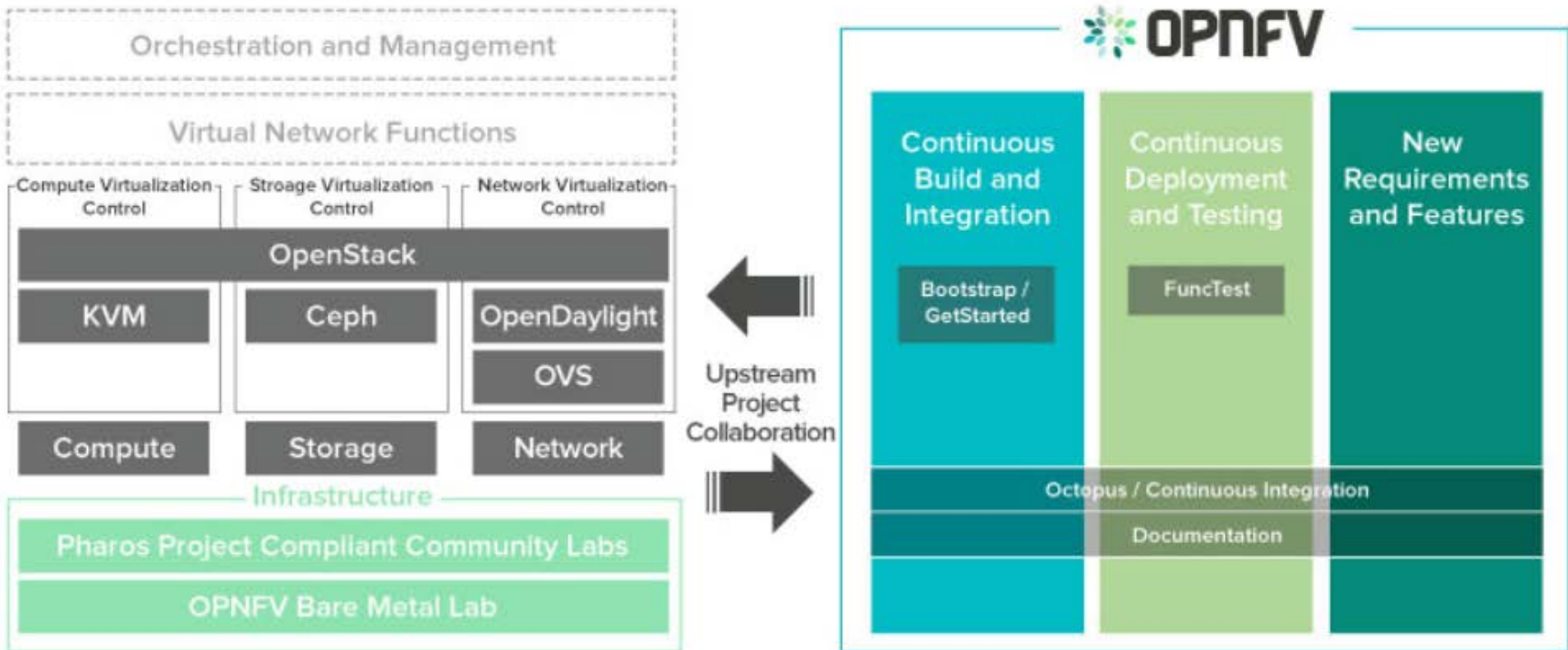
OPNFV=

- + OpenStack : Cloud Computing
- + Ceph : Software Storage
- + KVM : Virtualization
- + Open vSwitch : Software Switch
- + Linux : Operating System
- + ODL : SDN Controller

Telco Friendly Approach (1)

❖ OPNFV

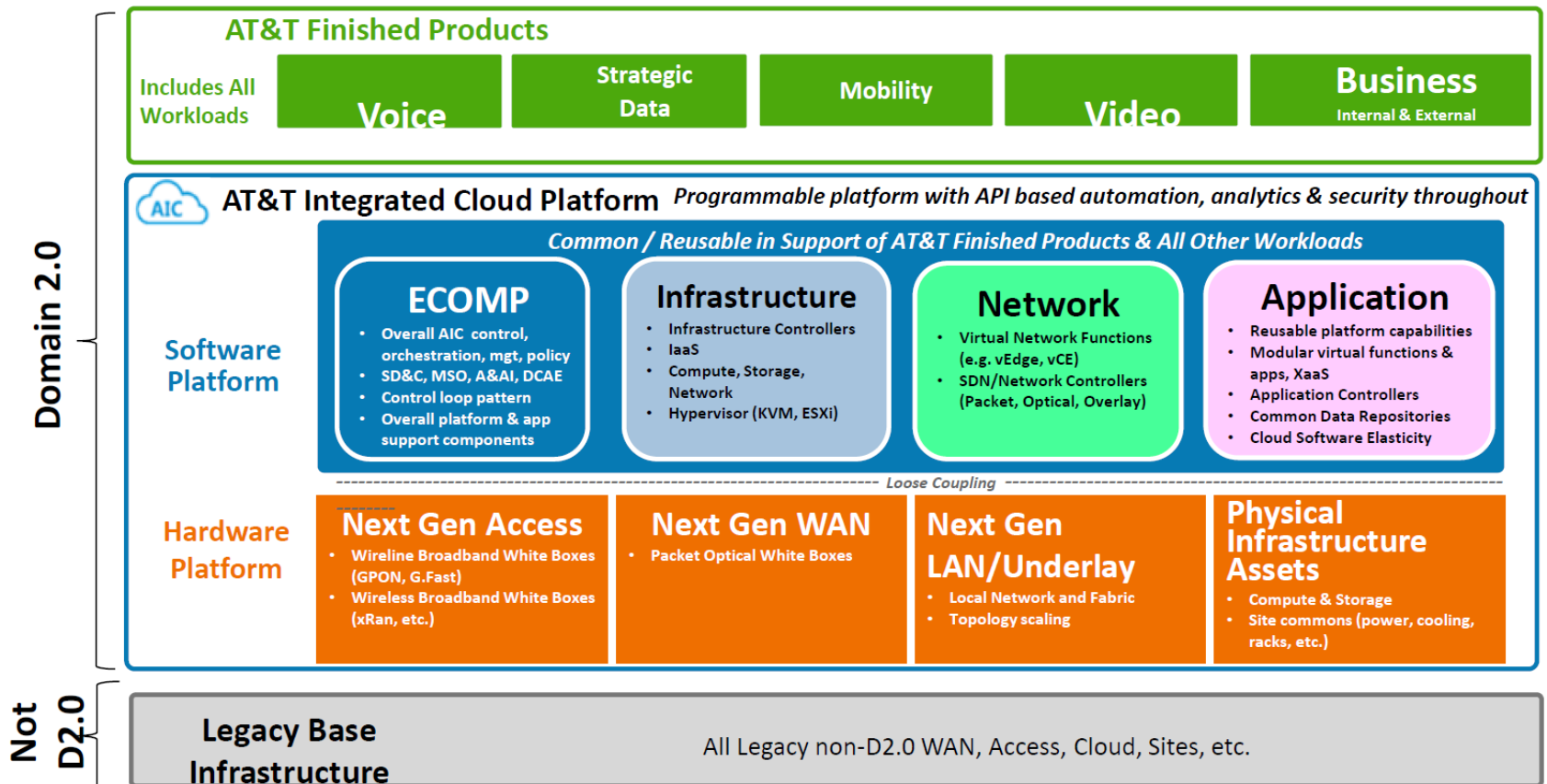
OPNFV Arno Overview



Telco Friendly Approach (2)

❖ AT&T

■ Domain 2.0

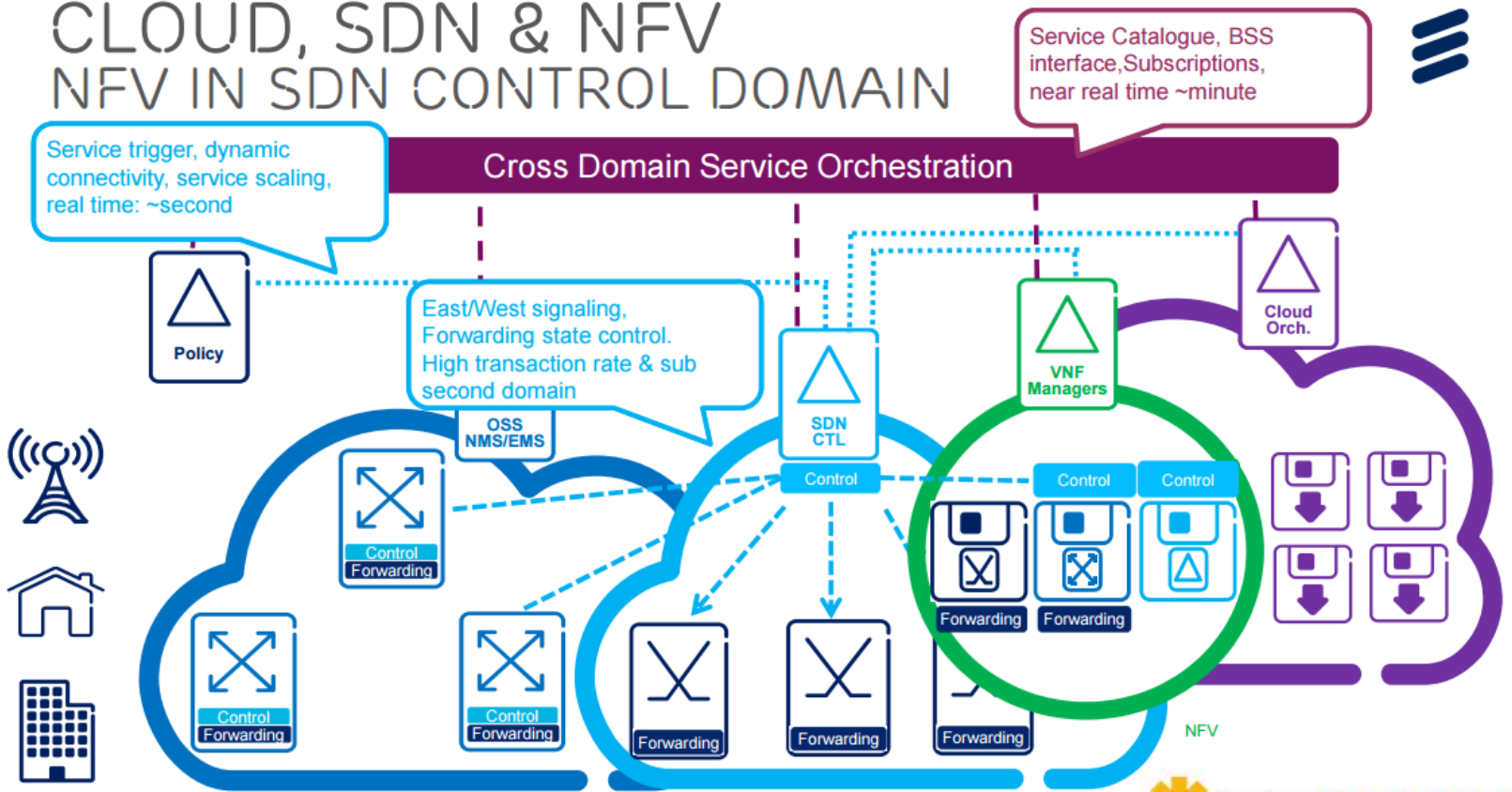


Telco Friendly Approach (3)

❖ Ericsson

- Cloud, SDN/NFV

CLOUD, SDN & NFV NFV IN SDN CONTROL DOMAIN

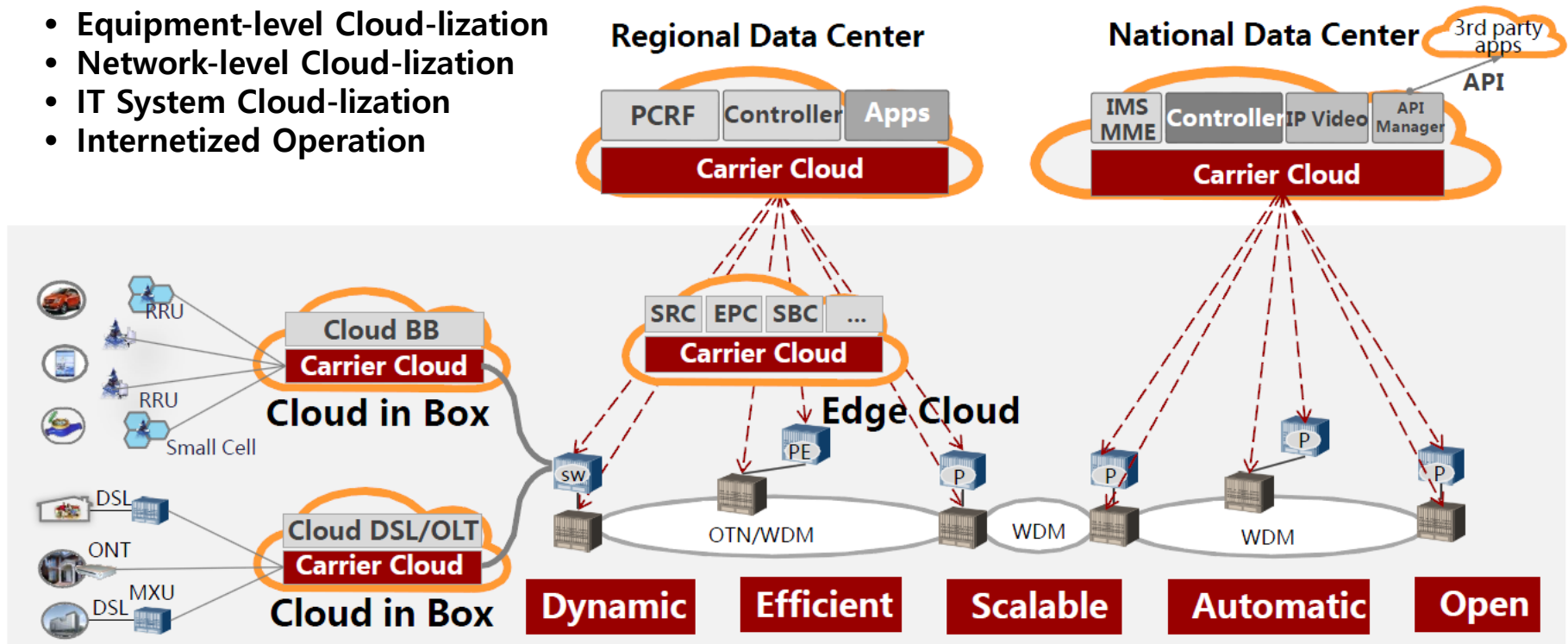


Telco Friendly Approach (4)

❖ Huawei

■ SoftCom

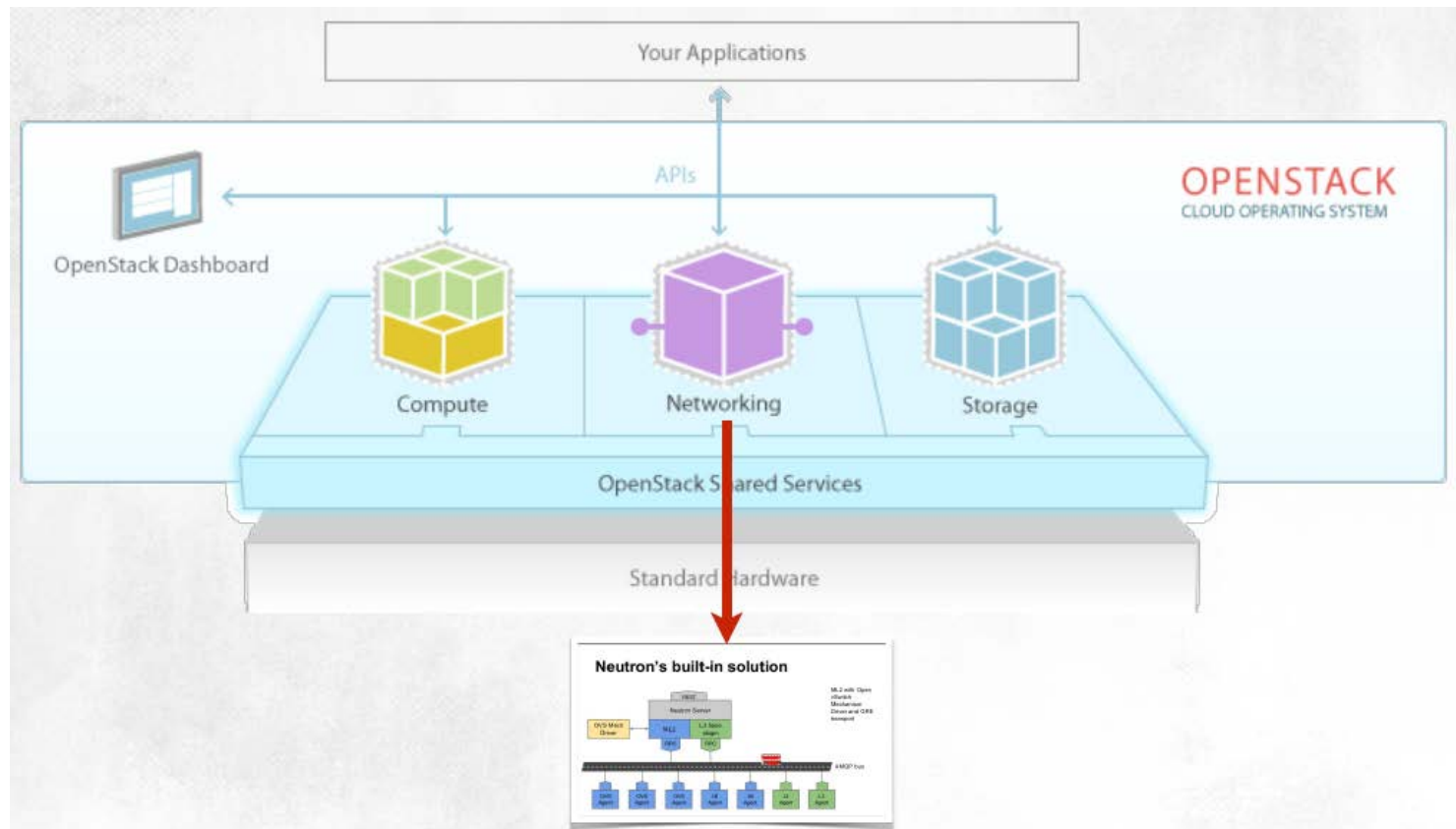
- Equipment-level Cloud-lization
- Network-level Cloud-lization
- IT System Cloud-lization
- Internetized Operation



IT Friendly Approach (1)

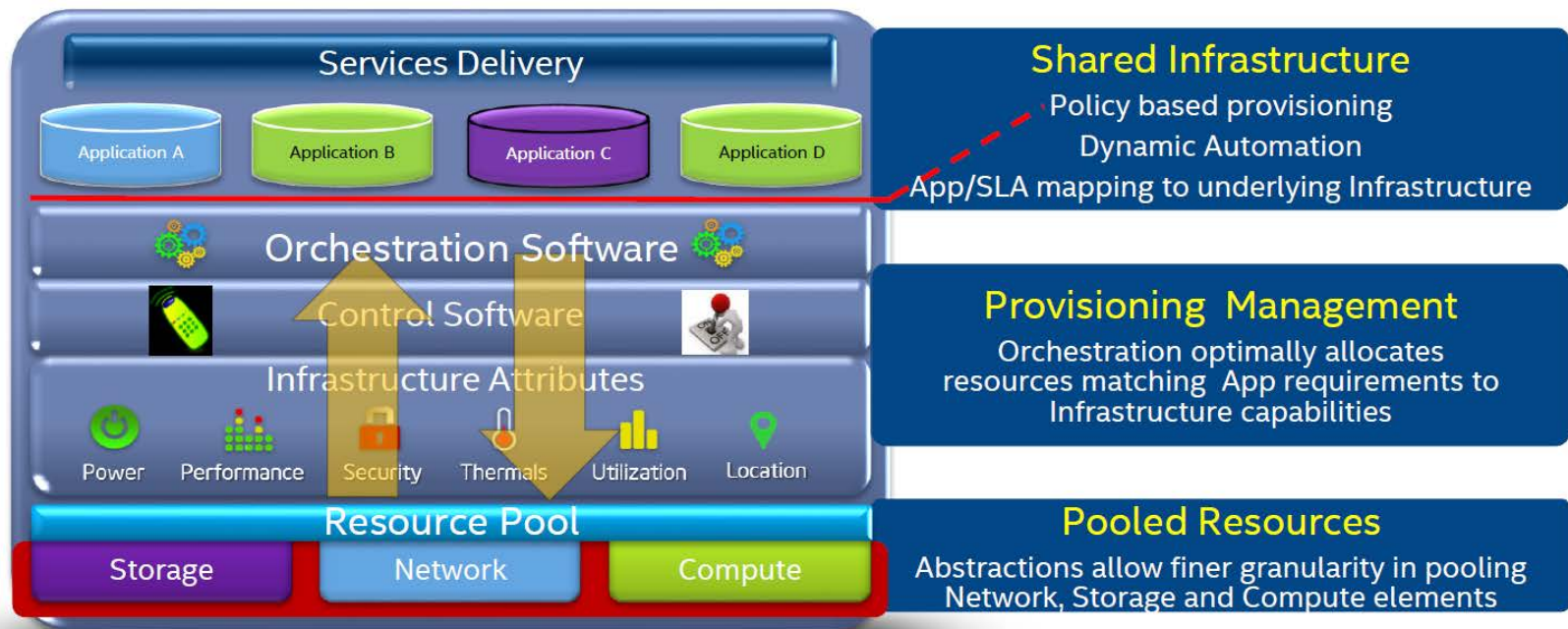
❖ Openstack

- Network as a Service



❖ Intel

■ Intel Rack scale architecture



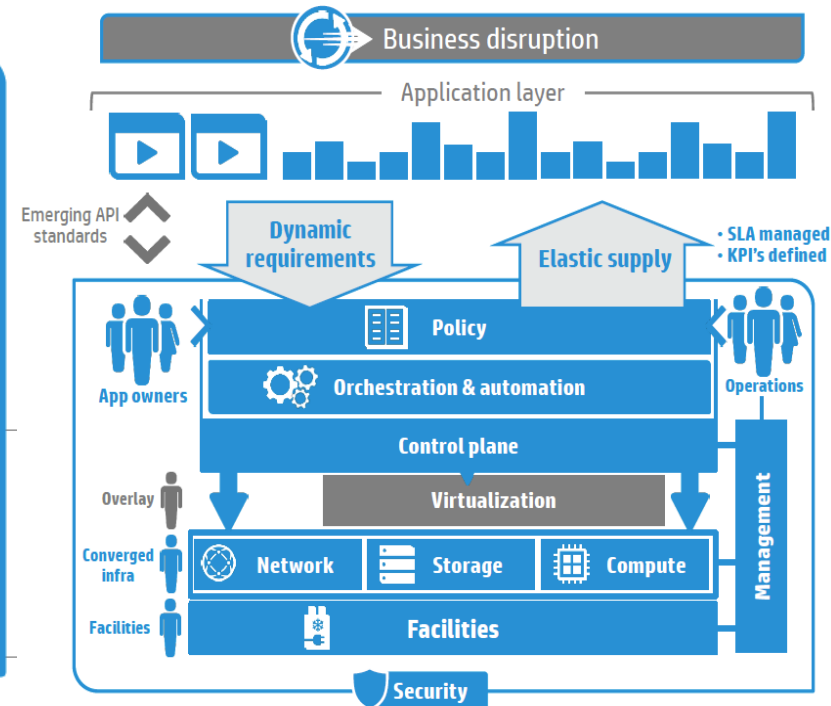
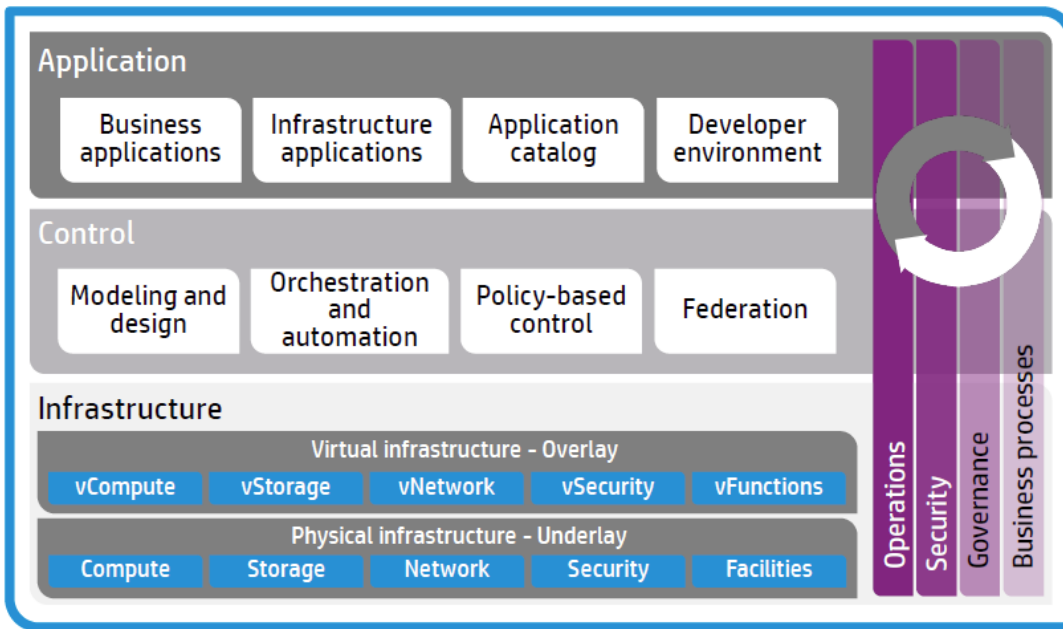
SDI benefits the User / Infrastructure owner by enabling faster innovation and lower cost
Efficient SDI requires Application ↔ Infrastructure interaction

IT Friendly Approach (3)

❖ HP

- SDI Reference Architecture (SDC, SDS, SDN, SDF)

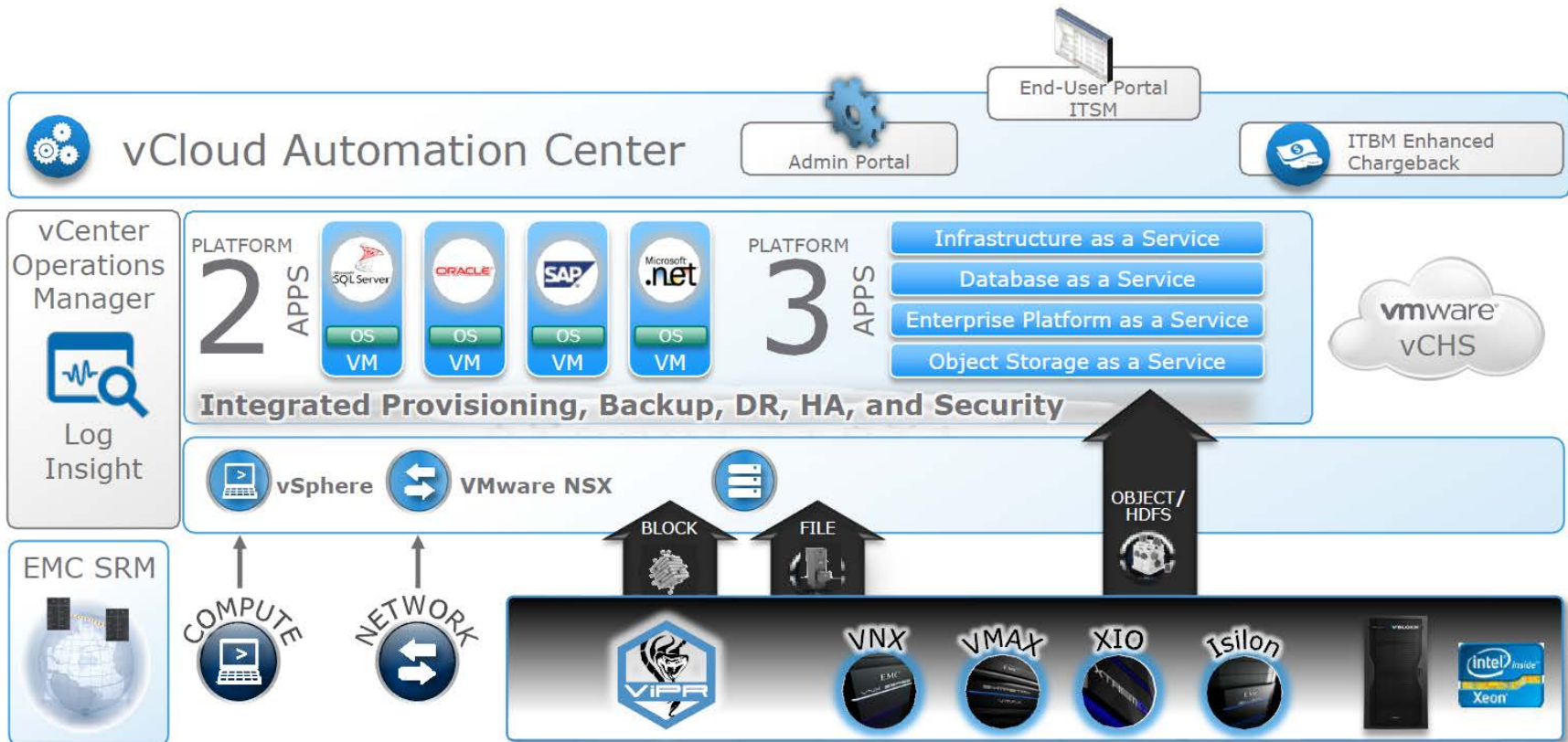
Functional View - What functionality should HP SDI Provide?



IT Friendly Approach (4)

❖ EMC & VMWare

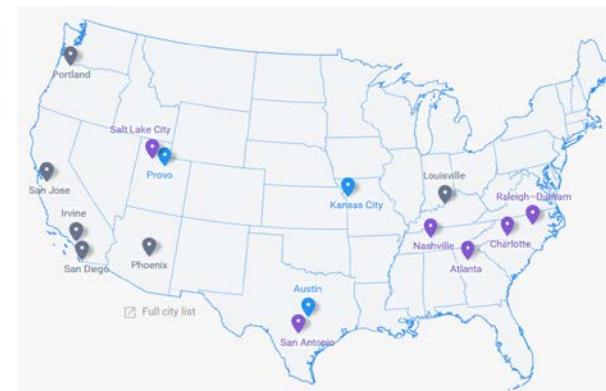
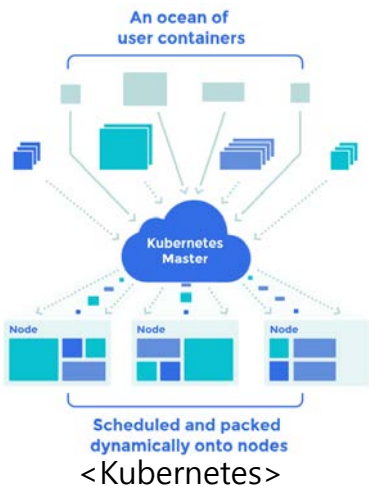
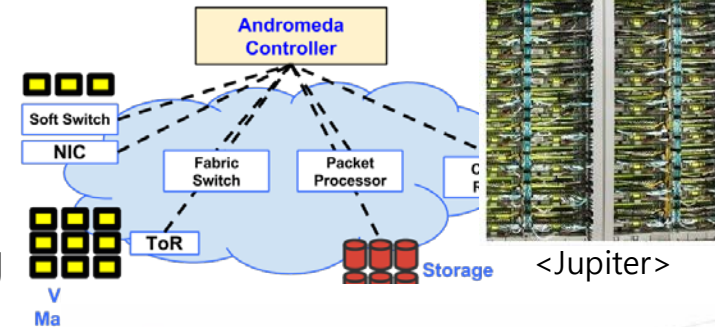
- Software Defined Storage & Software Defined Datacenter



IT Friendly Approach (5)

❖ Google

- Andromeda: SDN/NFV
- B4: Global SD-WAN
- Jupiter: SDN based Datacenter Networking
- Kubernetes: container orchestration
- Omega: distributed scheduling
- Google Fiber: support 1Gbps connection
- Project Fi: automatically connects the best network
- OnHub: Wi-Fi router

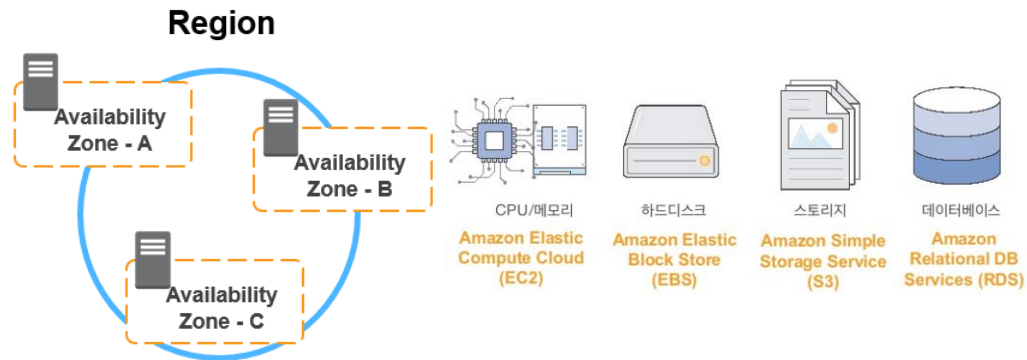
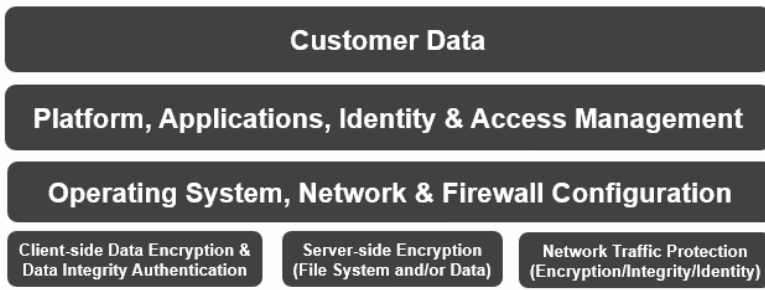


IT Friendly Approach (6)

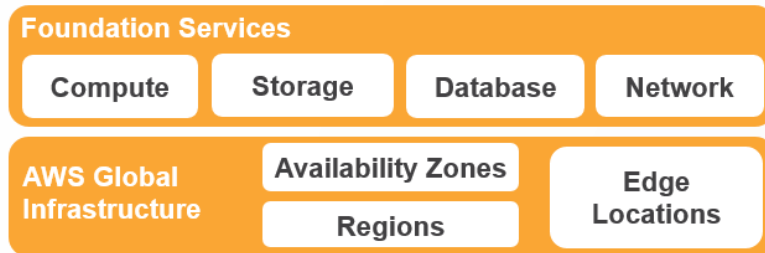
❖ Amazon

- Global infrastructure (Region, Availability zone, Edge location)

Customer



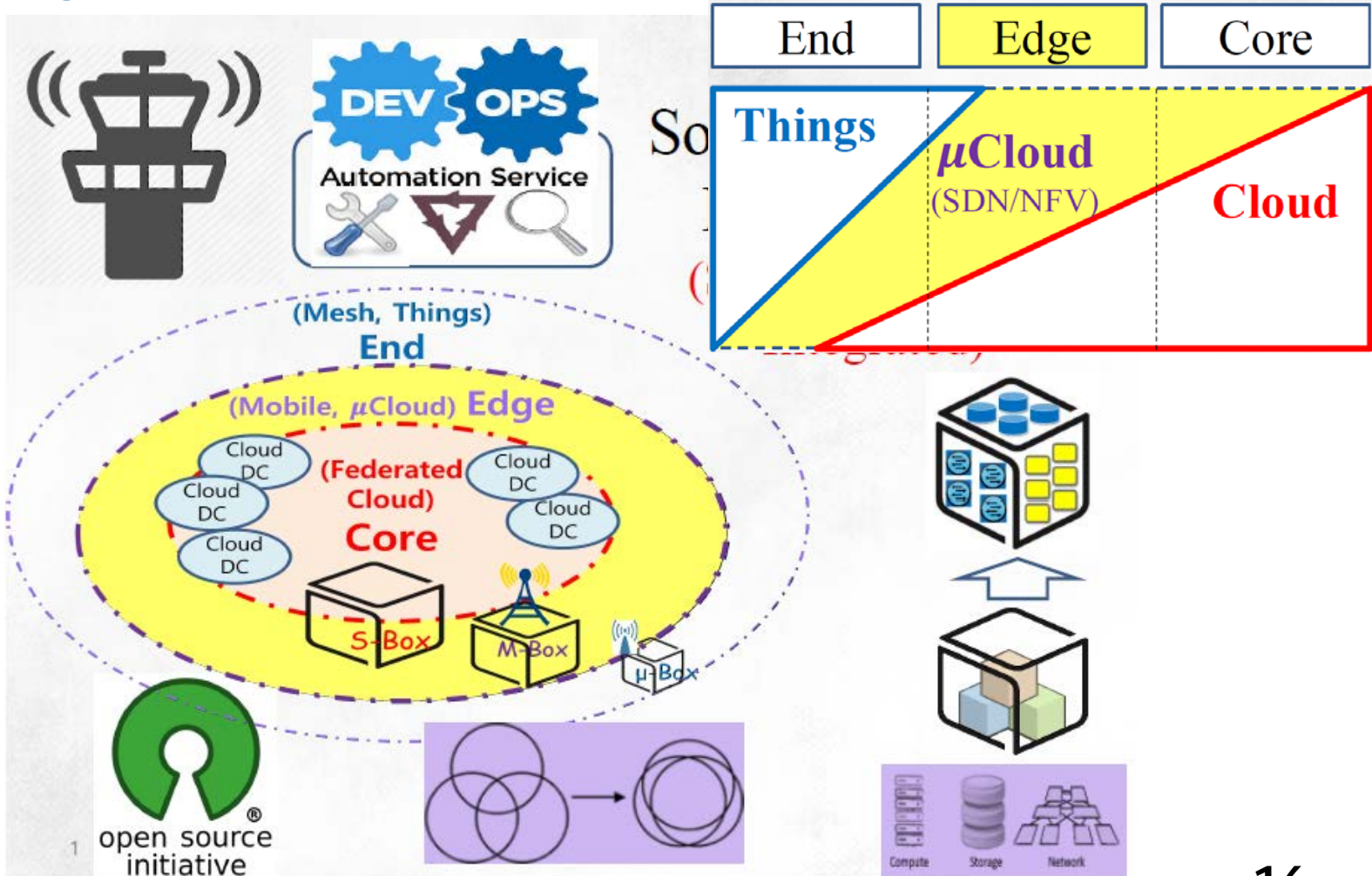
AWS



❖ Evolutional Deployment

- 1st Phase: Isolated Cloud with SDN/NFV (Independent Operators)
- 2nd Phase: Inter-operable/Federated Cloud with SDN/NFV (Cooperation between Operators)
- 3rd Phase: μ Cloud Integrated Cloud with SDN/NFV
- 4th Phase: Things Integrated Cloud with SDN/NFV

❖ Converged Software-Defined Infrastructure





Thank you!