Role of the Telco Ecosystem in Red Hat's Market Strategy

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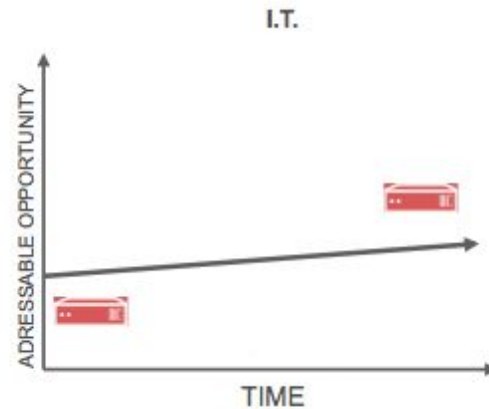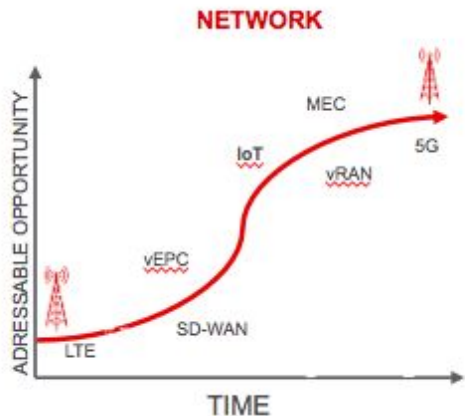# UNLOCKING THE NETWORK TO COMPETE WITH FANG

FANG: Facebook, Amazon, Netflix and Google

- These four companies are light years ahead in the use of open source technology

    - **Open & Collaborative**

    - **Fast Paced + Modular**

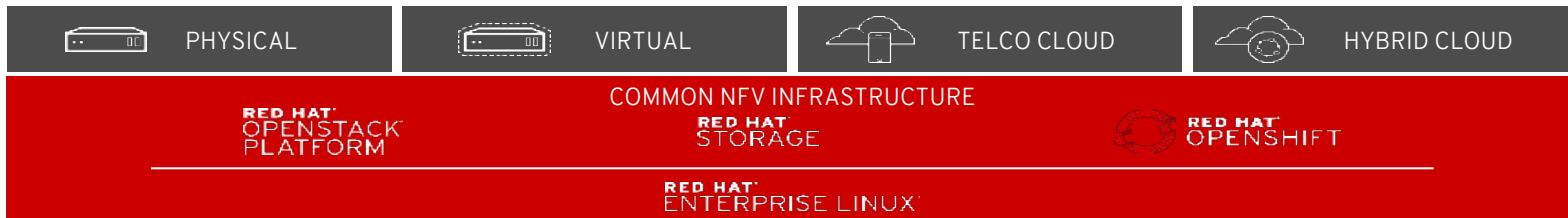   - **Decentralized**

    - **User-Driven**

- They collectively realized the inherent advantages of self-development of open source technology

- In one leap, Red Hat will allow mobile operators to enjoy the same technology advantages, on an equal open-source footing
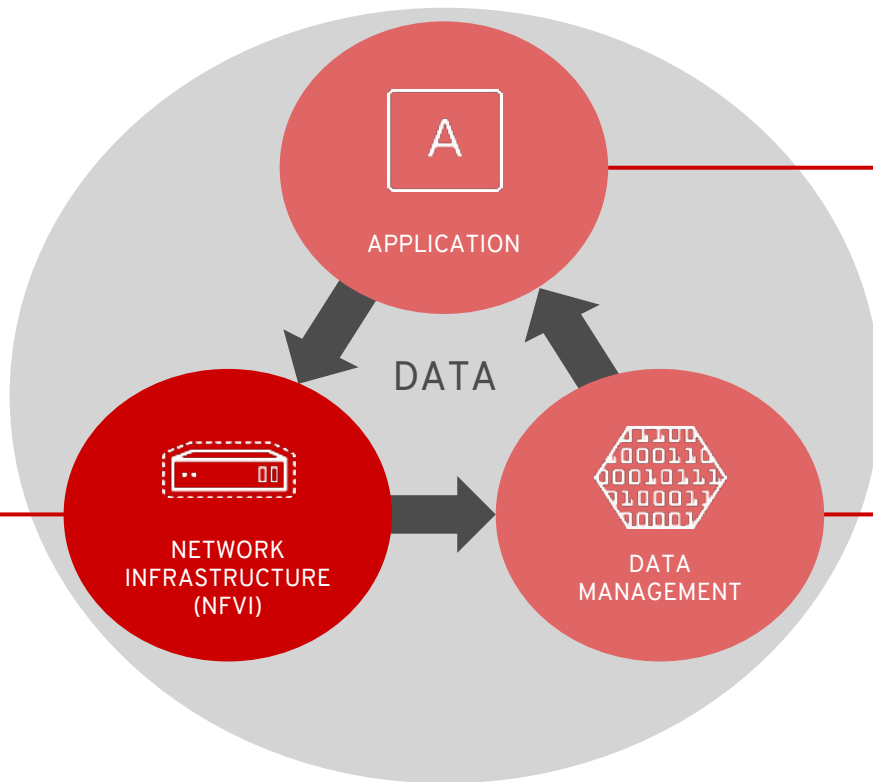
RETOOLING THE TELCO NETWORK INFRASTRUCTURE

LINUX IS THE FOUNDATION OF THE MODERN TELCO NETWORK

OPEN SOURCE TECHNOLOGIES

A

APPLICATION

DATA

NETWORK INFRASTRUCTURE (NFVI)

DATA MANAGEMENT

APPLICATION PLATFORM

- **Consumes** data from data platform
- **Delivers** data via the infrastructure platform
- **Supports** DevOps and containers

NETWORK INFRASTRUCTURE (NFVi) PLATFORM

- **Transports** data
- **Generates** data
- **Transforms** network from mainframe to cloud era
- **Delivers** ROI through automation and reduced vendor lock-in
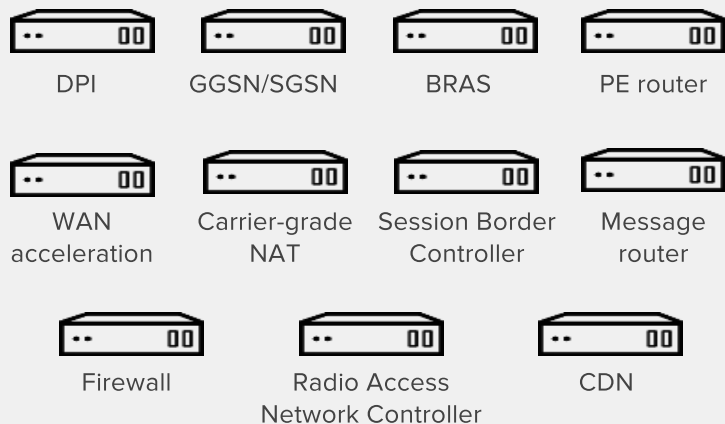
DATA MANAGEMENT PLATFORM

- **Collects** data from network
- **Transforms, distributes,** and **stores** data for applications

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NFV: MINIMIZING HARDWARE DEPENDENCIES FOR NETWORK SIMPLICITY AND FLEXIBILITY

TRADITIONAL NETWORK APPLIANCE APPROACH

DPI

GGSN/SGSN

BRAS

PE router

WAN acceleration

Carrier-grade NAT

Session Border Controller

Message router

Firewall

Radio Access Network Controller

CDN

- Network functions based on specific hardware/software
- Fragmented non-commodity hardware
- One physical node per role

VIRTUALIZED NETWORK APPLIANCE APPROACH

DPI	SBC	BRAS
Firewall	CG-NAT	RNC
GGSN/SGSN	PE router	WAN accel.

VNFs

MANO

vmware

openstack

NFVi

NFVi Hardware

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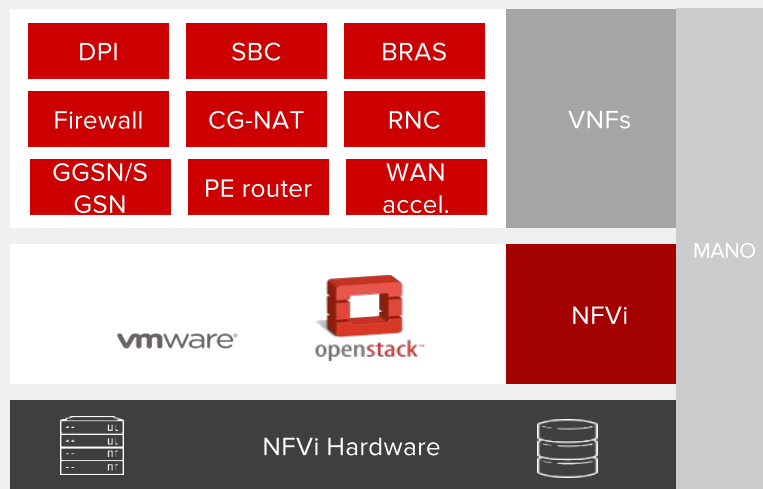
VNF SPEND IS MUCH LARGER THAN NFVI SPEND

MANO

VNF

NFVi

NFVi hardware

Total Spend

Time

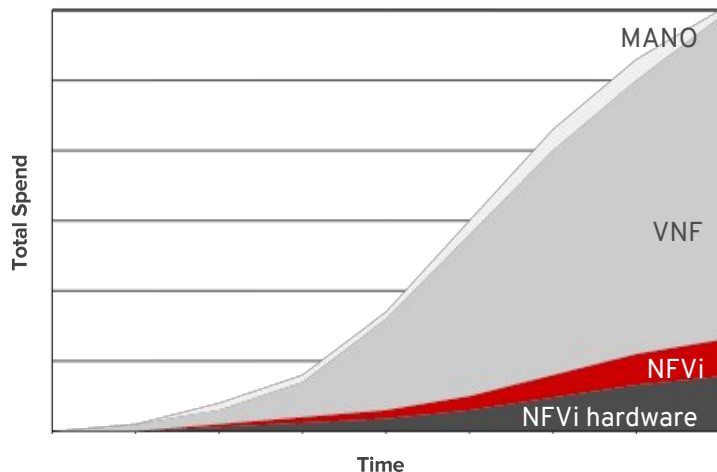- VNFs are the biggest portion of the spend, particularly as implementations scale

- HW Infrastructure spend will continue to be a sizable portion of the total but not growing as fast as total

- For SW Infrastructure, SDN was the initial focus, now moving to NFVI

  - MANO will become increasingly important, but all SW Infrastructure spend is secondary to VNFs, which drive overall ROI

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HORIZONTAL PLATFORM WITH A SINGLE, INTEGRATED INFRASTRUCTURE
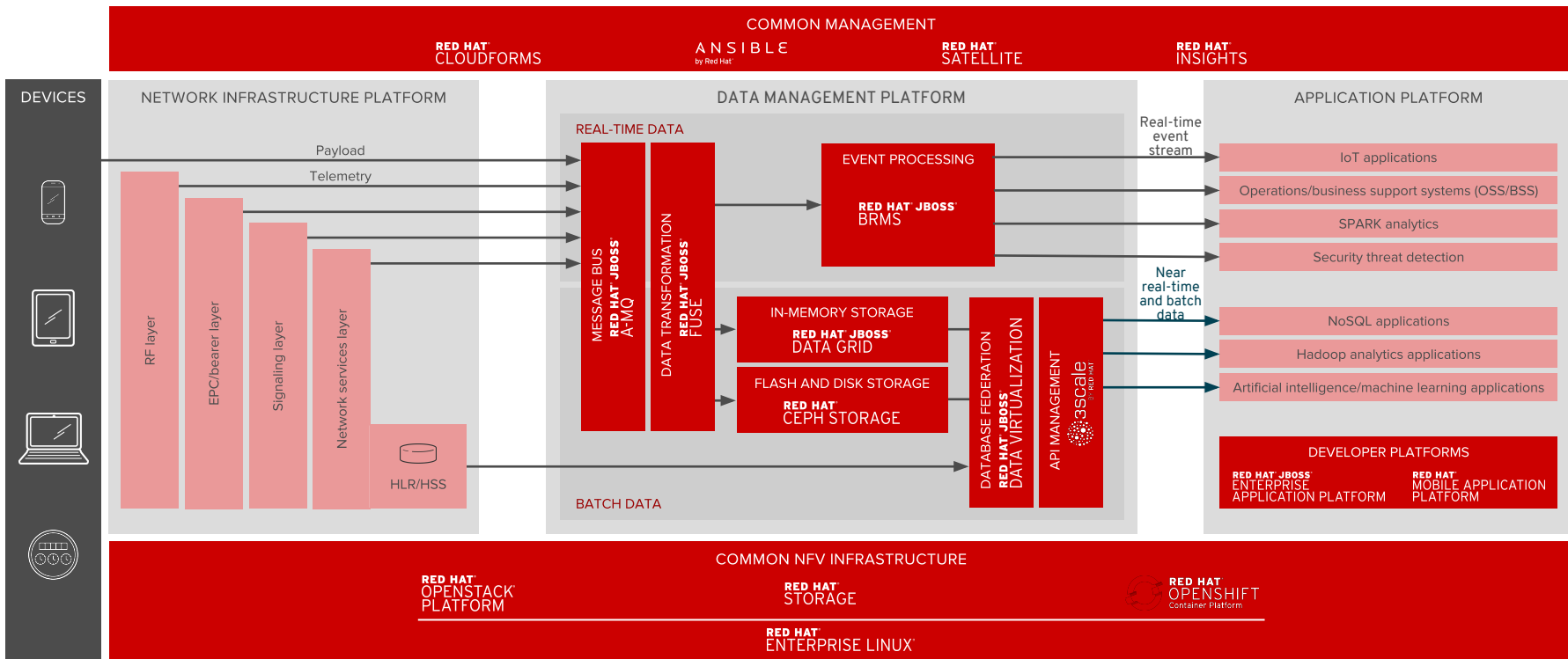
With Mobile Edge Computing and 5G/C-RAN, you can distribute this to hundreds of sites at the network edge. Common infrastructure is an imperative!

FIVE POINT STRATEGY

Deep Customer Engagement → Account Planning - Executive Engagement & Sponsorship - Industry Engagement & Sponsorship - Executive Roundtables - Telco Market Program Office (ABM) - Innovation Labs

Leveraged Partner Ecosystem → NEP - OEM - GSI - ISV

Solutions Oriented GTM → Automation - Storage - Cloud Platform - Microservices

Services Led Opportunities → Telco Practice - Partner Engineering

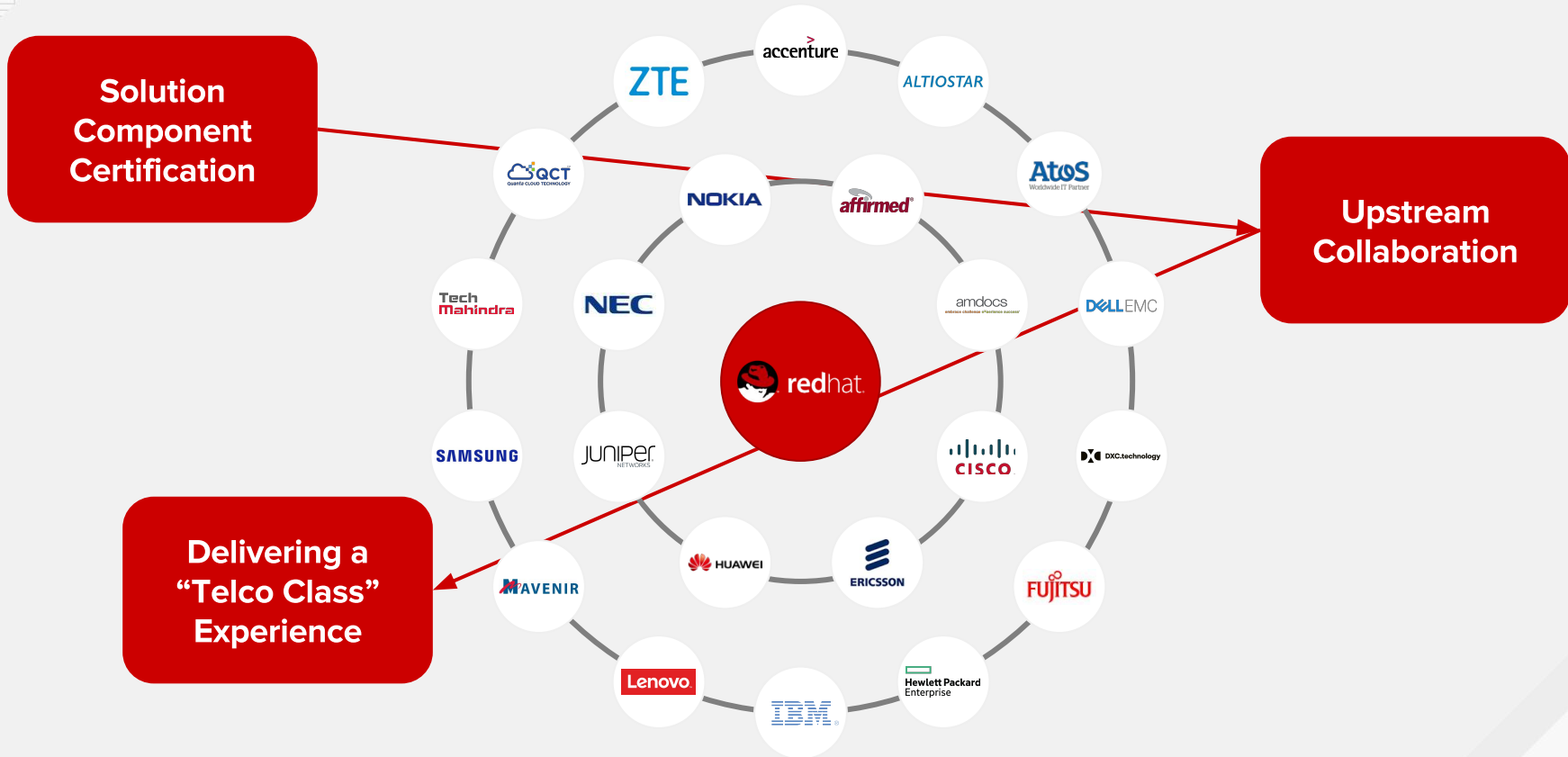**Operational Excellence** → People - Metrics - Alignment - RFx

TELCO ECOSYSTEM

31 partner workloads Validated or Certified
36 additional partner workloads in process

VIRTUAL NETWORK FUNCTIONS (VNFs)

A10 Networks · ALTIOSTAR · CISCO · ERICSSON · GENBAND · JUNIPER · sandvine

affirmed · AVI Networks · CITRIX · f5 · HUAWEI · paloalto NETWORKS · ZTE

SOFTWARE-DEFINED NETWORKING PLUGINS

ARISTA · CISCO · JUNIPER NETWORKS · NEC

big switch networks · CPLANE NETWORKS · Lenovo · nuage networks

BROADCOM · HUAWEI · Mellanox TECHNOLOGIES · NOKIA

BROCADE · IBM · midokura

SOFTWARE-DEFINED STORAGE PLUGINS

DELL EMC · HITACHI Inspire the Next · NetApp

FreeStor · HUAWEI · nimble storage

FUJITSU · IBM · Tintri

Hewlett Packard Enterprise · INFINIDAT · violin MEMORY

MANAGEMENT & ORCHESTRATION (MANO)

amdocs

ciena

CISCO

CLOUDIFY

NOKIA

TATA

HARDWARE

CISCO · FUJITSU · HITACHI Inspire the Next · IBM · intel · Lenovo

DELL EMC · Hewlett Packard Enterprise · HUAWEI · INFINIDAT · kaminario

Extending partner ecosystem and certifications with partners
enables a broad choice of technology solutions

RED HAT TELCO ECOSYSTEM

SUMMARY

- The telco industry is on an exciting journey of network transformation

- Red Hat is the leader in open source -- we know how to provide rapid and sustainable innovation through our upstream first approach

- The ecosystem is evolving and combining in new ways to deliver a telco-class experience in a software-defined world

- Like the basic tenet of open source, there is power in "us", so join us!

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THANK YOU!

QUESTIONS?

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