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NFV- Why and How it is like ISDN. And What is Next?

- Mike Riley, PE, Mid-State Consultants, Inc.

MID-STATE CONSULTANTS

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What is NFV?

How many times have you seen some version of this slide?

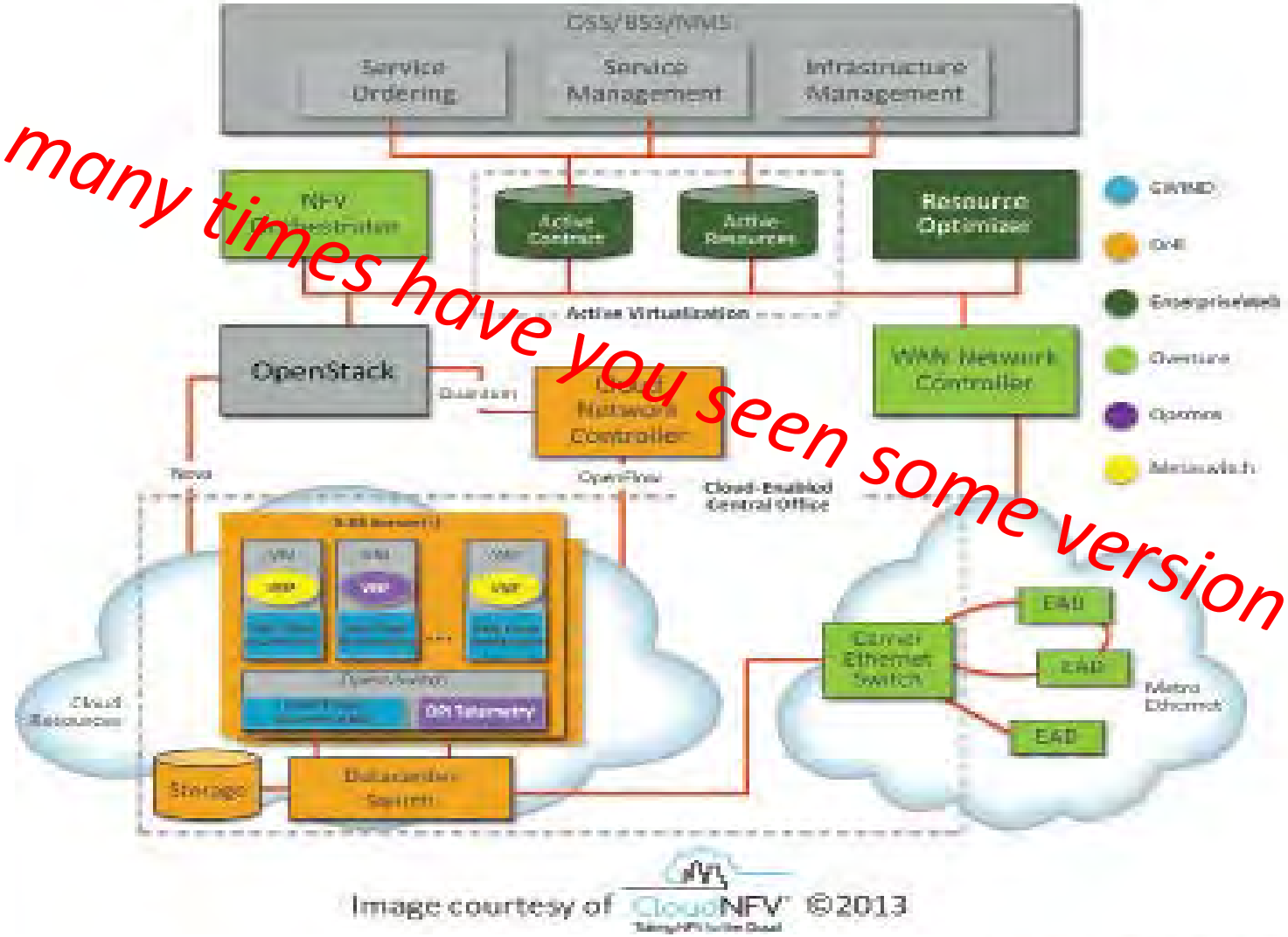

Image courtesy of CloudNFV ©2013

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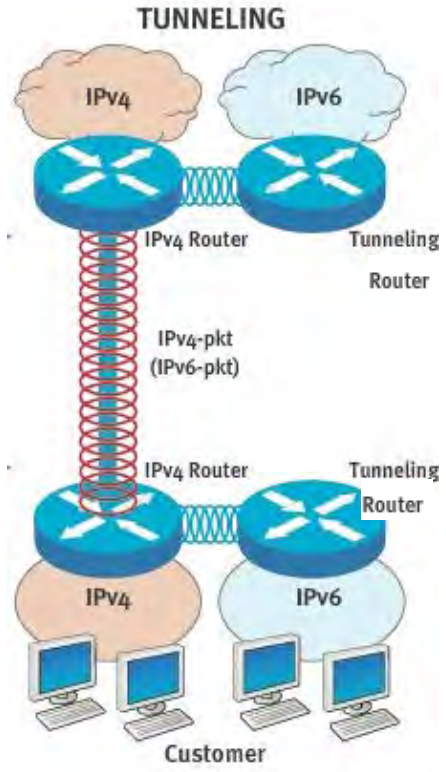
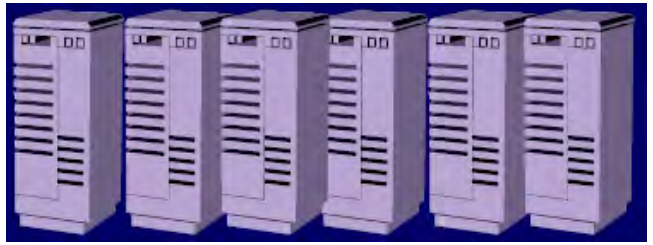
Where is NFV used?

Many existing (and new) proprietary hardware-based network elements can be virtualized.



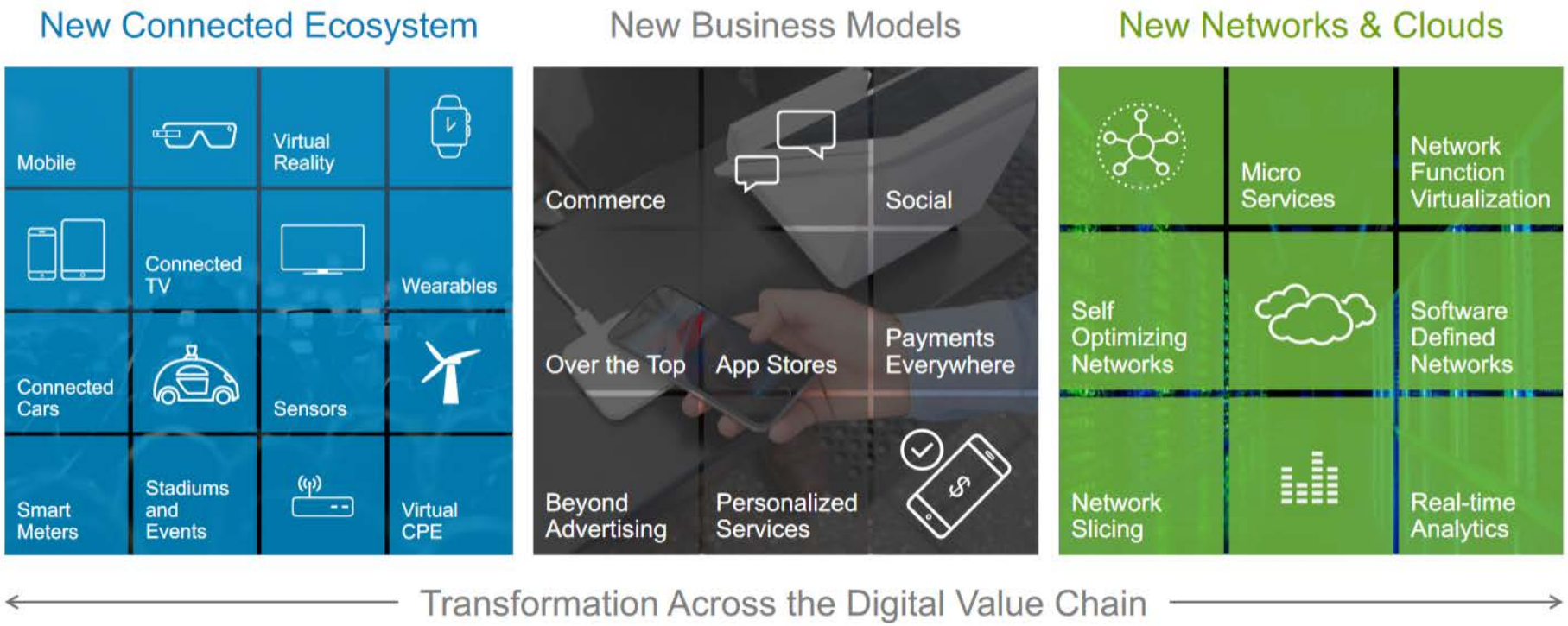


One box and software instead of multiple boxes

NFV proposed a total transformation

Misbah Mahmoodi

A Whole New World – Digital Transformation



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Original Acronyms

ISDN – Integrated Services Digital Network

- It was going to be the digital access network for data and voice traffic

NFV – Network Functions Virtualization

- A tightly controlled architecture much cheaper – and possibly faster - than the dedicated (but old) hardware

SDN – Software Defined Network

- Essentially generic hardware with an overarching control plane can do more than the proprietary equipment

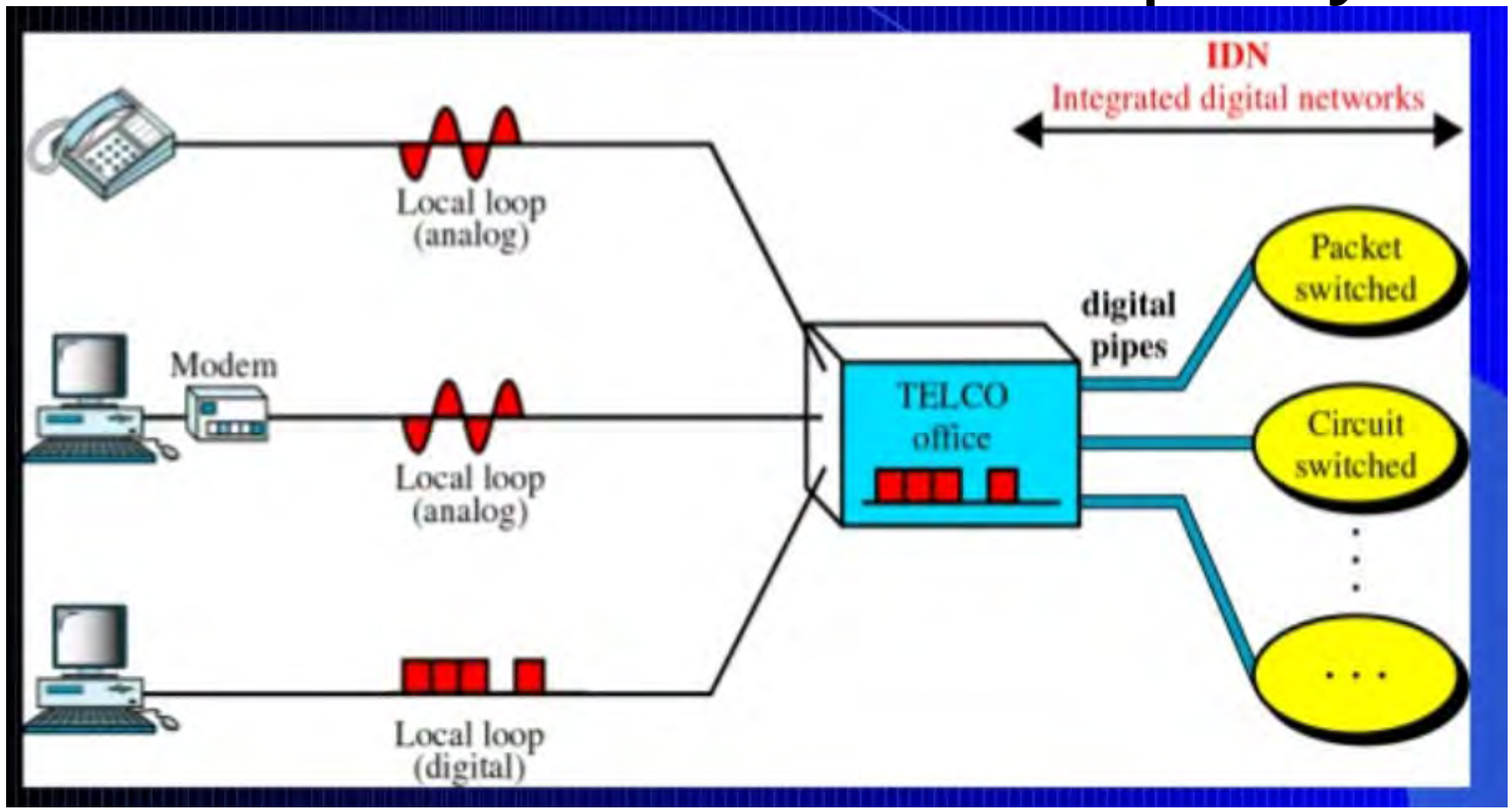
More Accurate Acronyms?

- ISDN – I Still Don’t Know – or
  Innovations Subscribers Don’t Need

- NFV – Nobody Finds Valuable – or
  Networking’s Faltering Vaporware

- SDN – Still Does Nothing

The ISDN architecture was pretty simple…



At least in theory…

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Why Did ISDN die?

And FTTP. And 4G…

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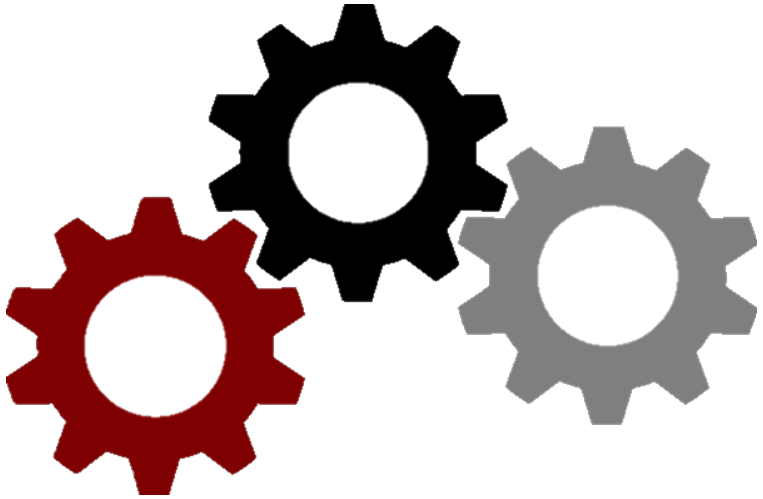
ISDN didn’t really die

- ISDN is actually still used - for some applications that need high quality and tight control of circuits



NFV has been 6+ years in development

Do you still have any ISDN in your network?

Yeah, you probably do.

Do you have any NFV in your network?

You will – in one form or another.

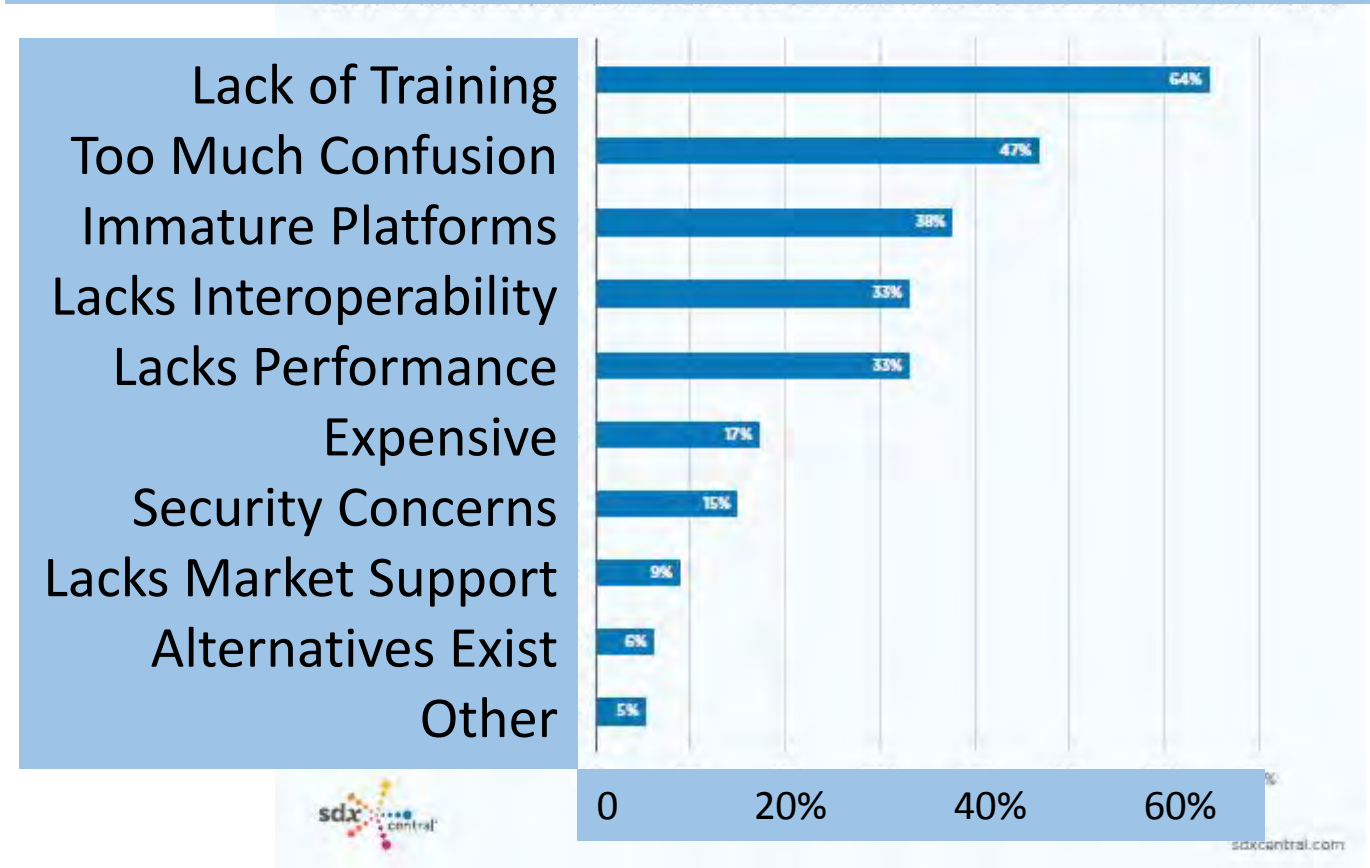
Why is - or isn't - NFV headed the way of ISDN?

"This has to be a data model - mediated, stateless process - implemented framework…"

"The promise was an NFV infrastructure where anyone could develop anything. What we are headed towards is a network where a white box and software replaces another box."

Tom Nolle

What Challenges, Barriers, & Risks Inhibit Deploying NFV

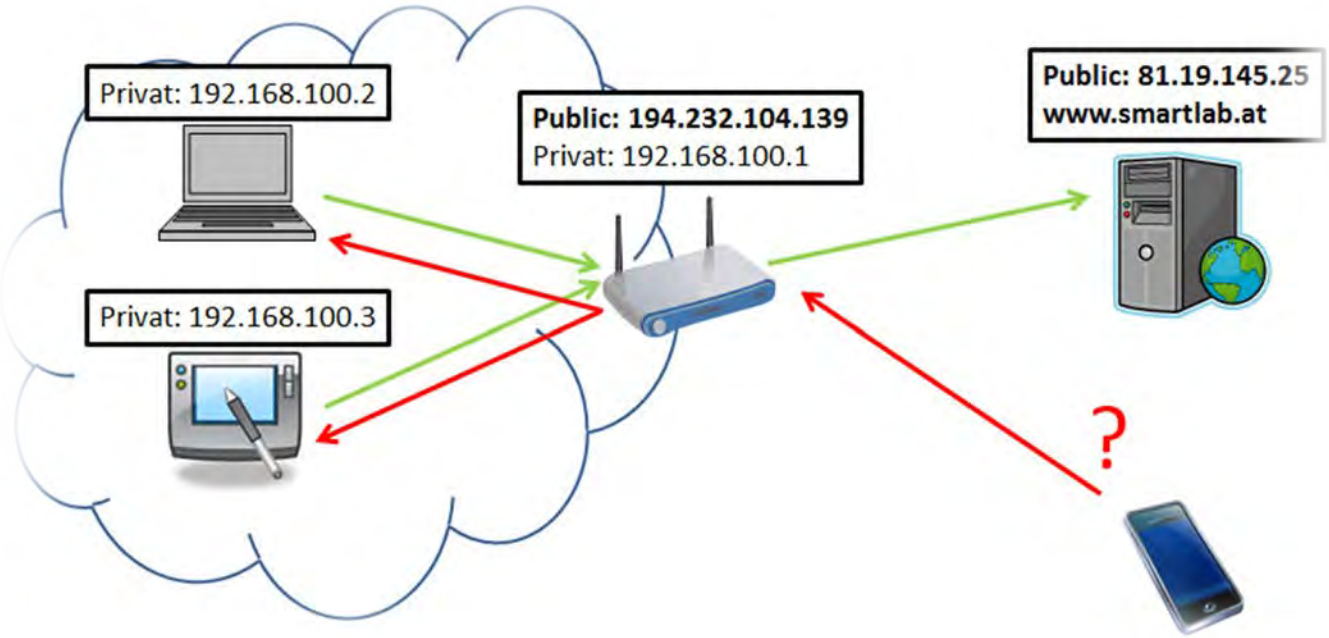


Why is NFV so hard?

- It needs a lot of moving parts nailed down…

Why might NFV still not reach it's full potential?

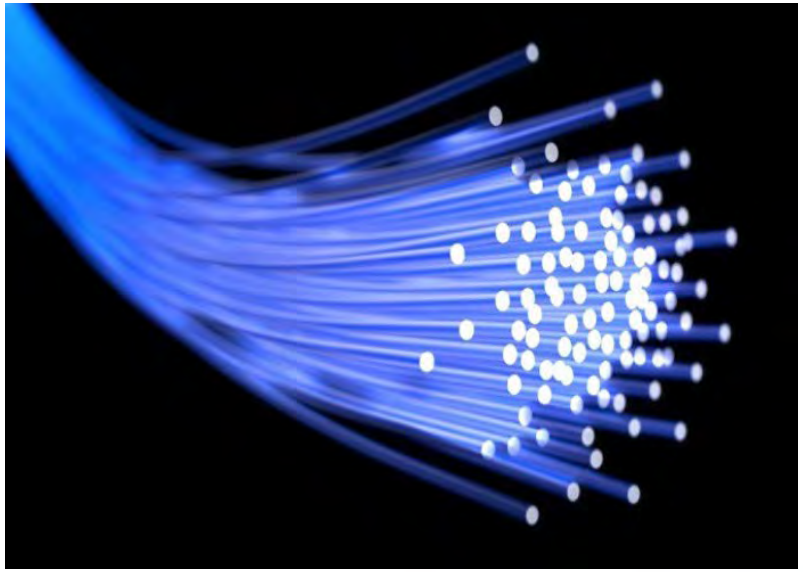
It will, but not in the way it was first envisioned



What about SDN?

- Will SDN ever reach its promise?
- It's tough to compete with really cheap legacy equipment.
- But, SFPs that plug right into routers are a form of SDN?
- It's a control plane incorporating …

SD – anything!

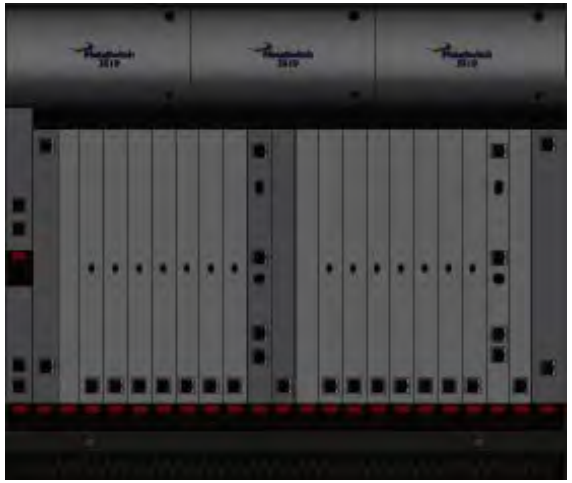


What are the big guys doing?

"The real trick is to find out what workloads and services you virtualize when and why.“

David Hicks, VP of engineering and operations for Cox Communications

Just because it can be virtualized doesn’t mean it should be!

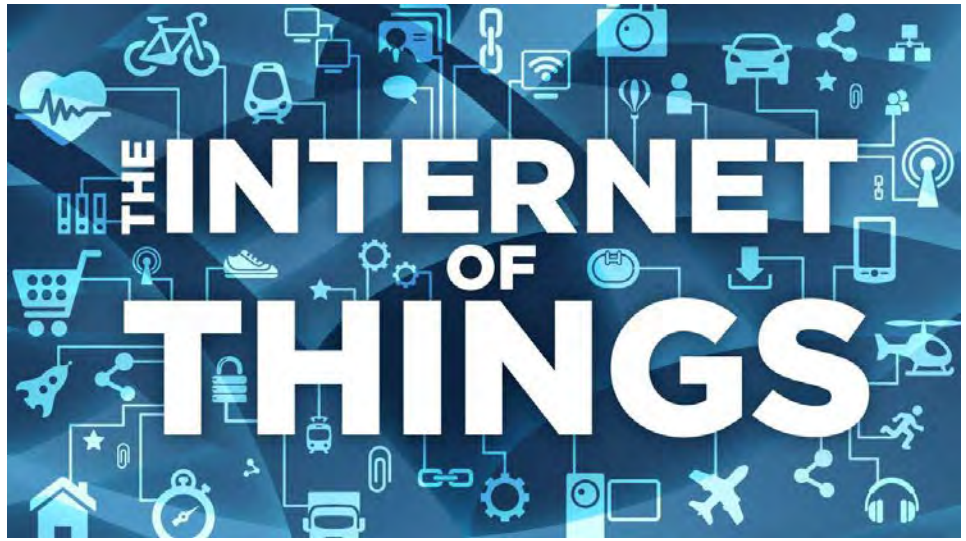


So, NFV is working…
But when will I see it?

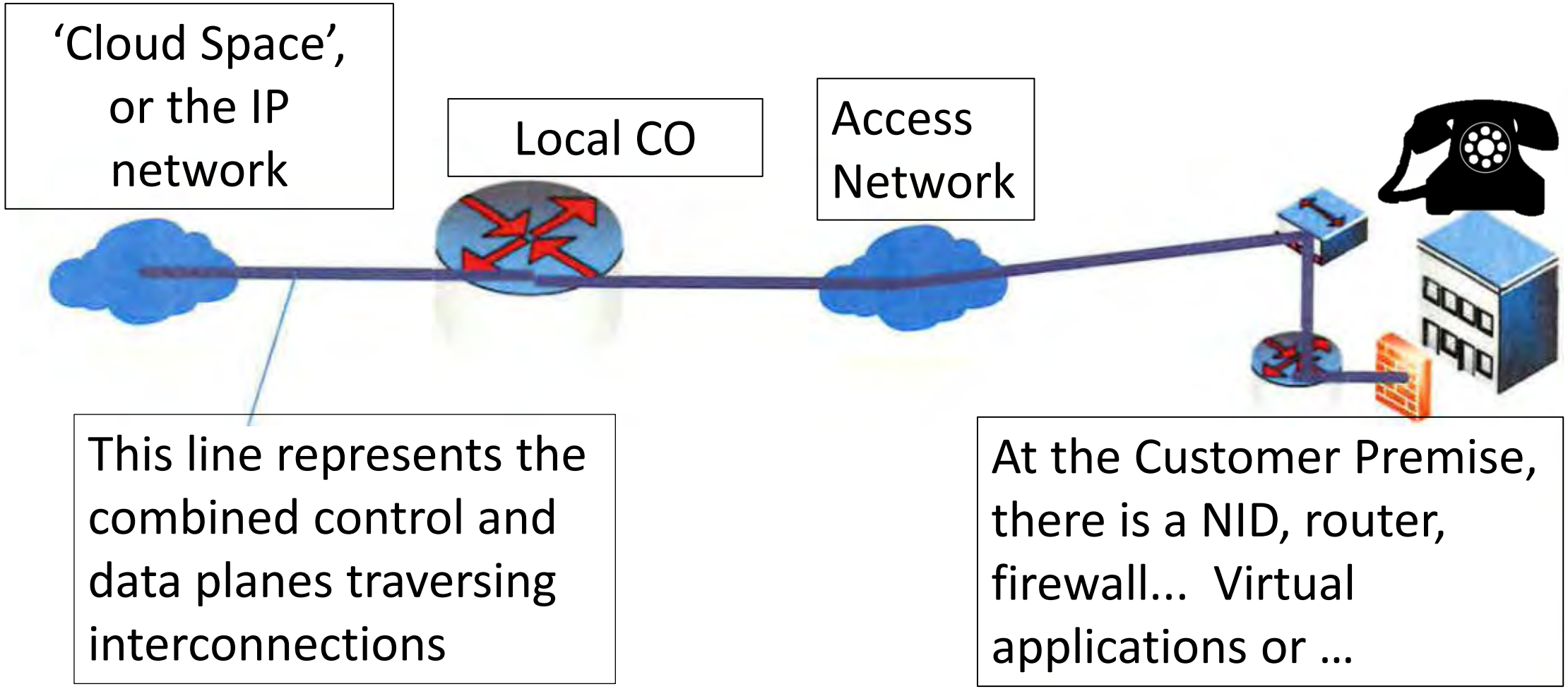
Hewlett Packard sees four phases of NFV evolution:

- Decouple, Virtualize, Cloudify, Decompose –
- Then, the advanced users will build their own (virtual) networks!

This starts to sound pretty familiar…



What will it look like?



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Are there alternatives?

‘Personal’ Clouds

Runs on top of the provider’s network
Add real value by providing more control of apps
“Automation is the glue for subscribers to build their own virtual networks.”

What is the Cloud, exactly?

It depends on who you ask –

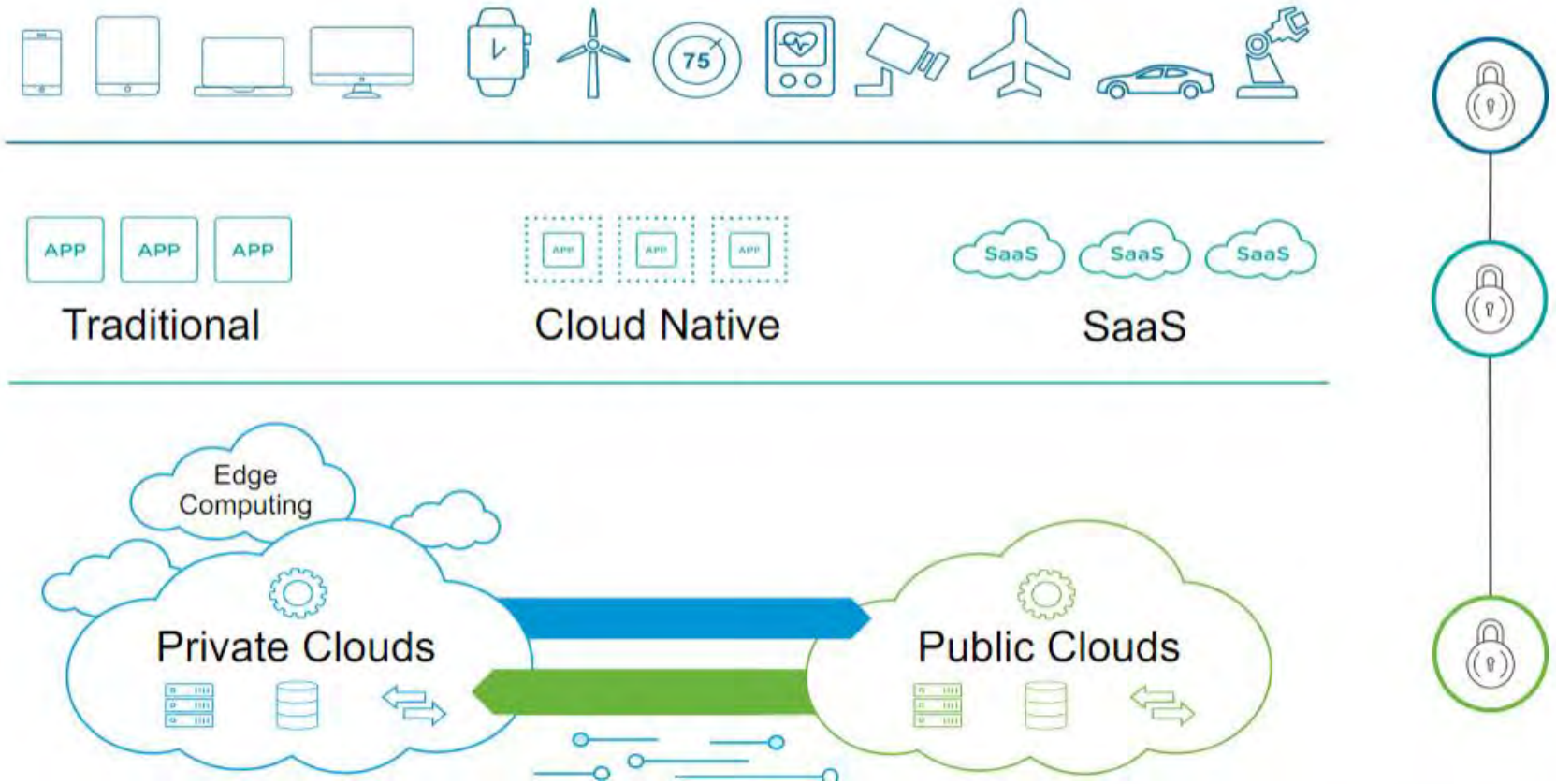
- Shared Compute and Storage Resources
  - *like big NFV?*
- Distributed intelligence
  - *like SDN?*
    - Telco clouds? [Telco cloud functions]

Vision for a Multi-cloud Environment

Any Device

Any Application

Any Cloud



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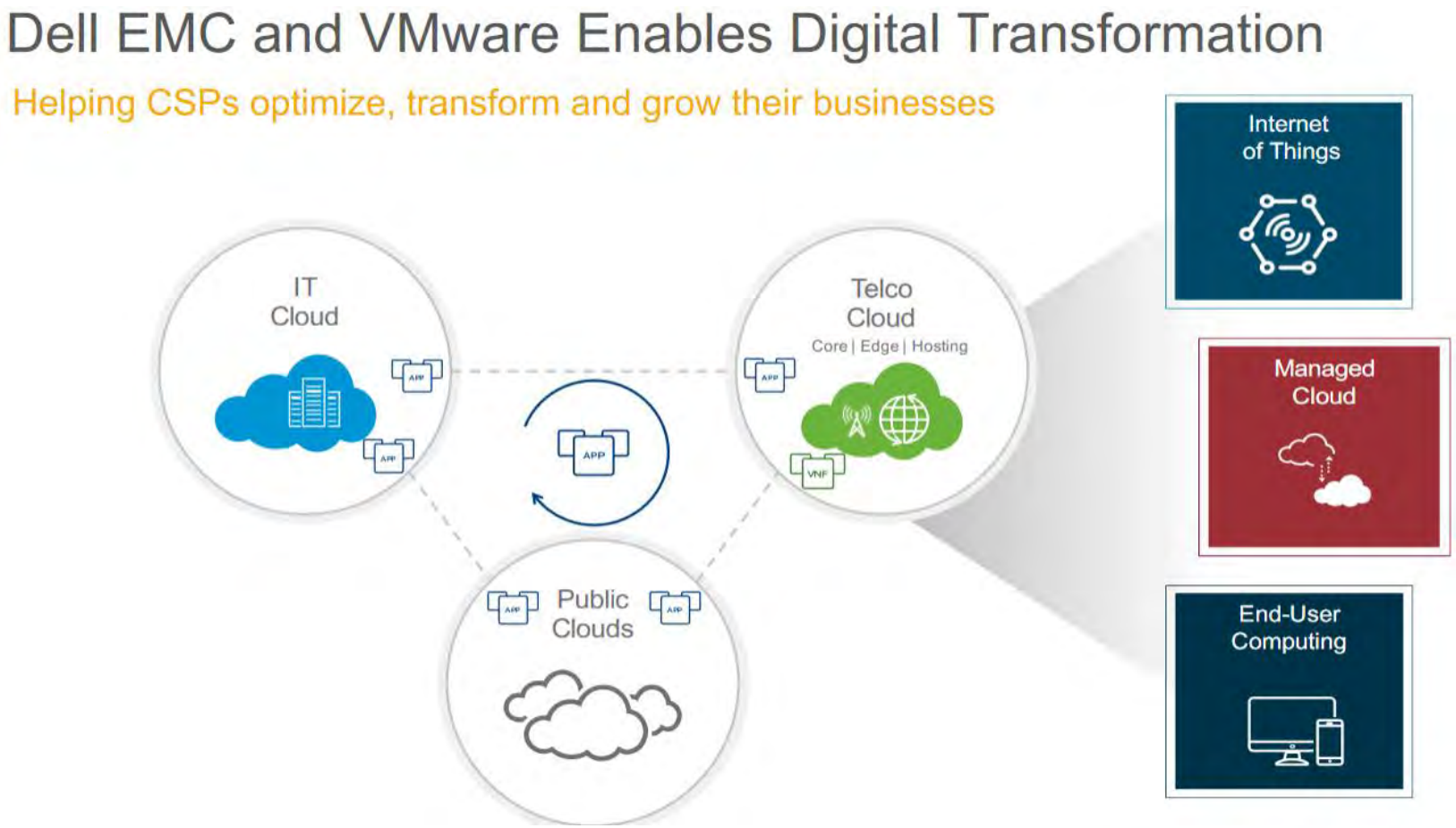
Different versions of clouds?



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A Hybrid will Develop?

NFV will happen, SDN will happen, the IoT will develop

- RAD – NFV apps that interwork with TDM hardware, and manage the interworking

ACE firms can help!

A few of the interworking players

Ensuring rapid service onboarding and deployment

ERICSSON, NOKIA, HUAWEI, ZTE中兴, affirmed

CISCO, Metaswitch Networks, MAVENIR SYSTEMS, ATHONET, BROCADE

velocloud, VERSA NETWORKS, silver peak, viptela, riverbed

benu networks, FORTINET, netrounds, Infoblox, radisys

f5, CITRIX, NetNumber, SIEMENS, Check Point

ANGEL, PROCERA, Openwave Mobility, A10, Symsoft

66 Certified VNFs

Publicly available reports

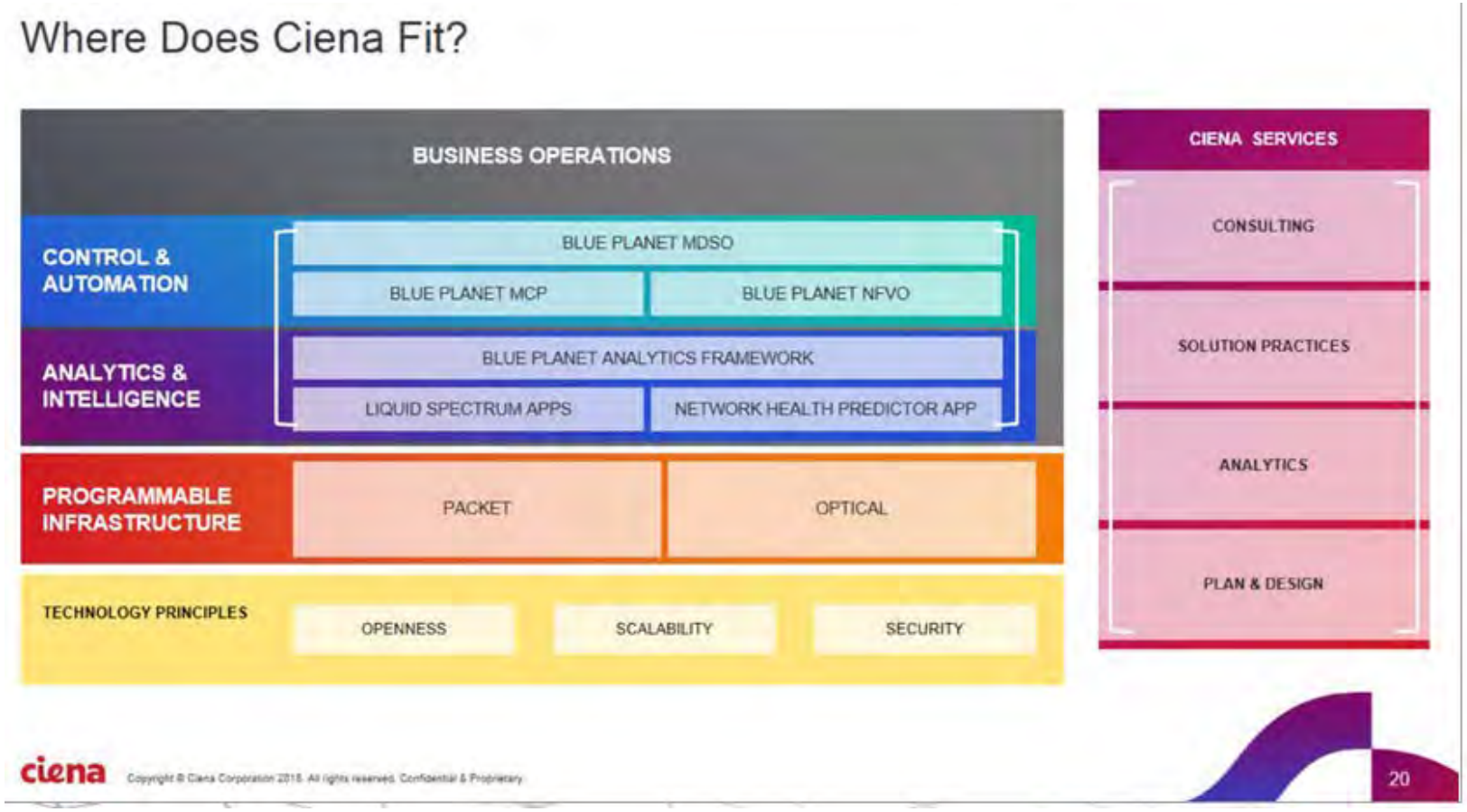
33 VNFs certified on VMware Integrated OpenStack

DELL EMC

vmware READY

NETWORK FUNCTIONS VIRTUALIZATION

Upper levels of the Ecosystem?



Dell wants to coordinate real apps

Advantages of Dell EMC Ready Solution for VMware

Ready-to-use solution

- Fully validated and tested by Dell EMC
- Decreases your deployment risk
- Enables faster deployment time

Ease of ordering

- Full bundle orderable from Dell EMC
- No need to buy software separately
- Eliminates hassle of ordering from two different vendors

Long lifecycle support

- Long-life Intel® Xeon® processors
- Reduces your investment risk
- Protects your investment for the long-haul

Seamless customer experience

- Single point of contact for entire solution – Dell EMC
- Support for full length of deployment
- Provides peace of mind

World-class professional services

- Dell EMC professional services included
- Consulting, deployment, and design support
- Guides your deployment needs

Customizable solution

- Prescriptive solution yet not restrictive
- Customize to address your unique VNF workload requirements

Delivers exceptional scalability and agility in an integrated, optimized, and cost-effective package

Mea Culpa?

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  Mike Riley, Mid-State Consultants, Inc.