WHY A PLATFORM APPROACH FOR SDN/NFV TRANSFORMATION IS A WINNING STRATEGY

THE EVOLVING DIGITAL ERA

The digital era is pushing businesses to evolve not only their business models but also their operations. In this era, information and communications technology (ICT) is business critical as well as business essential. Software-defined networking (SDN), which includes network functions virtualization (NFV), has emerged as a new architectural approach for the network that promises not only to facilitate and accelerate the modernization and digital transformation of businesses but also to save businesses significant capital compared to the traditional way of running their ICT organizations.

SDN is about separating the control plane from the data plane in the network. In SDN/NFV environments, this entails separating the intelligence (software) from the hardware and centralizing it in the cloud. This intelligence is then pushed out into the access layer of the network to tell industry-standard hardware, also known as white-box hardware or universal customer premises equipment (uCPE), what functions to perform at the end user's premises. This architectural approach enables users to realize the benefits of leveraging the cloud as well as significantly reduce their on-premises spend on proprietary network appliances and labor to support those environments. This model also allows businesses, especially those with multiple branch offices, to have more visibility into and control over their network resources across their geographical footprints.

SD-WAN has emerged as the predominant initial use case for SDN technology. Adoption of SD-WAN, which became commercially available in 2015, has rapidly taken off, with the technology on track to attain mainstream adoption among businesses in North America in 2020. Businesses have been drawn to SD-WAN because the business case has been validated and there are multiple benefits cited from using the technology, including cost savings, visibility, control, flexibility, agility, and insights from the network at a higher level than previously experienced. These attributes have enabled early adopters of SD-WAN to realize significant

Definitions

ICT – Information and communications technology encompasses the full network and IT stack.
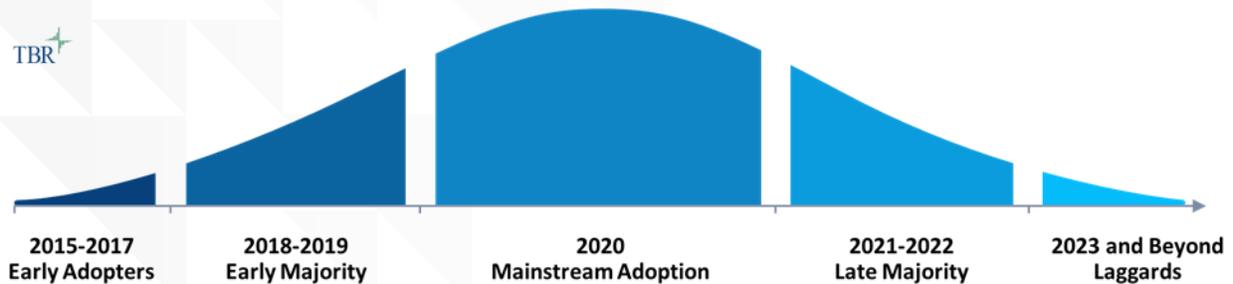
SDN – Software-defined networking is the separation of the control plane from the data plane in the network.

NFV – Network functions virtualization includes the infrastructure (NFVI) and platform on which VNFs are housed and distributed.

VNF – Virtual network functions are individual network applications that are in a virtualized state.

cost savings (which predominantly stems from the optimization of network resource consumption, but also other areas), as well as make more informed decisions about how they utilize network resources and align their ICT environments to business initiatives.

North America Business SD-WAN Adoption Curve

| 2015-2017 Early Adopters | 2018-2019 Early Majority | 2020 Mainstream Adoption | 2021-2022 Late Majority | 2023 and Beyond Laggards |

SOURCE: TBR

The promising results from early adopters of SD-WAN have prompted more and more businesses to consider adopting the technology. However, though more businesses are eager to pursue software-defined transformation, leading with SD-WAN, there is confusion in the industry as to which strategy to adopt and which partners to select.

While some businesses, particularly large enterprises, are willing and able to tackle software-defined transformation head-on, the reality is that most businesses will prefer to take a more hands-off approach toward their ICT operations, leaning on partners to handle the complexity and day-to-day operations of the ICT stack so that they can gain the agility, flexibility and cost savings they desire while freeing up time to redeploy their operational talent and focus on running their businesses. This desire has already been demonstrated by the global cloud phenomenon, where more and more workloads are being migrated to the cloud. This same mentality is now filtering into the networking domain via SDN/NFV.

WHY A PLATFORM APPROACH IS A GOOD OPTION FOR VIRTUALIZATION

TBR believes a platform approach for software-defined transformation by businesses is not only a viable strategy but also a desirable strategy for businesses to consider when determining how to approach their own software-defined transformation.

A platform approach provides businesses with several advantages:

- Establishes a foundational conduit from which to more seamlessly adopt individual virtualized technologies such as SD-WAN as well as other virtual network functions (VNFs) over time

- Implements and manages with less complexity, and puts the burden of day-to-day operations and **support on the platform provider**

- Lays the groundwork for zero-touch security, providing IT administrators with comprehensive yet granular visibility and control over their networking environments

- Enables businesses to add new VNFs in near real time, which accelerates their migration to realizing the full potential of SDN/NFV technology

- Provides more seamless orchestration between VNFs and applications versus pulling together individual point solutions

- Provides a single pane of glass for a business to view its network resources and make more informed decisions
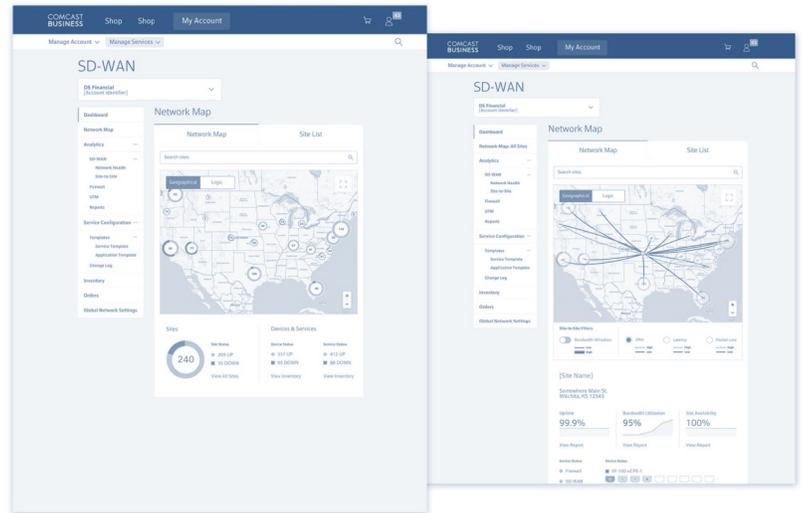
Comcast Business has been actively investing in SDN/NFV since the technology gained industry recognition several years ago. Comcast Business' decision to invest in SDN/NFV is consistent with the company's beliefs that software will enable innovation in the digital era and that networking environments will be virtualized and leverage the cloud.

Comcast Business also believes a platform approach toward SDN/NFV adoption is the right strategy for most businesses to pursue. Comcast Business' ActiveCore platform, which launched in September 2017, encompasses all of the attributes endemic to a platform approach and more. ActiveCore is hosted in Comcast Business' nationwide, carrier-grade cloud and is secured via stateful firewalls. ActiveCore provides businesses with a tool set they can leverage to realize the benefits that SDN/NFV offers, including increased control and visibility over network resources. ActiveCore is also fully compatible with Comcast Business-provided uCPE, which Comcast Business manages on behalf of the business, removing the burden of infrastructure handling from the business so that it can focus on its core activities.

SD-WAN is the first VNF offered on the ActiveCore platform, and Comcast Business plans to introduce many more. Over the next few years, Comcast Business intends to add VNFs covering a broad range of network applications to ActiveCore, including in the areas of security, unified communications, routers and more, which will enable businesses to realize the comprehensive benefits of SDN.
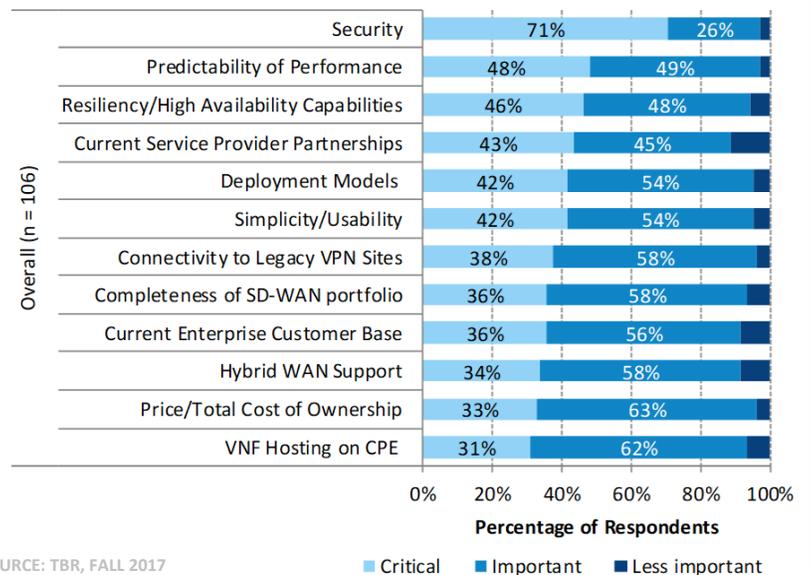
WHAT BUSINESSES LOOK FOR IN A STRATEGIC PARTNER FOR SDN/NFV TRANSFORMATION

Aside from the benefits a platform approach offers, businesses must consider other important factors when opting to pursue digital transformation. One key factor is deciding which strategic partners to work with over the long term. Some of the fundamental criteria considered by businesses when selecting a long-term, strategic partner for networking include the following:

- **Security —** Security is a top priority for businesses and is routinely ranked as the most important attribute in the vendor selection process for SDN/NFV.

- **Agility and flexibility —** Businesses want agility and flexibility in how they procure and consume network resources from their suppliers.

- **Ease of integration —** Businesses want solutions that are easy to understand, implement and integrate.

IMPORTANCE OF ATTRIBUTES IN SD-WAN TECH VENDOR SELECTION

Attribute	Critical	Important
Security	71%	26%
Predictability of Performance	48%	49%
Resiliency/High Availability Capabilities	46%	48%
Current Service Provider Partnerships	43%	45%
Deployment Models	42%	54%
Simplicity/Usability	42%	54%
Connectivity to Legacy VPN Sites	38%	58%
Completeness of SD-WAN portfolio	36%	58%
Current Enterprise Customer Base	36%	56%
Hybrid WAN Support	34%	58%
Price/Total Cost of Ownership	33%	63%
VNF Hosting on CPE	31%	62%

Overall (n = 106) — Percentage of Respondents — ■ Critical ■ Important ■ Less important

SOURCE: TBR, FALL 2017

- **Industry expertise —** Businesses want a partner that they can rely on for support.

- **Presence —** Businesses, particularly large enterprise, have multiple locations that require coverage, and they want a partner that can provide a full-scope solution across their footprint.

- **Price — Businesses want a strong value proposition for the price they are paying.**

Security is frequently cited as the one of the most important considerations for implementing SDN/NFV. An SD-WAN Market Pulse Study TBR commissioned in 2H17 showed that over 97% of businesses surveyed believe security is important or critical in the selection process for an SD-WAN vendor.

WHY COMCAST BUSINESS IS A GOOD PARTNER FOR SDN/NFV TRANSFORMATION

Comcast Business not only meets the key criteria cited by businesses but also covers other considerations:

Security Comcast Business uses stateful firewalls, which are embedded into its cloud architecture, to secure ActiveCore.	**Agility and flexibility** Comcast Business' platform approach provides businesses with the agility and flexibility they need to implement and leverage SDN/NFV technology.	**Ease of integration** ActiveCore is hosted by Comcast Business' data centers. Comcast Business provides and manages the uCPE environment, which enables seamless integration on the business's premises. Comcast Business also handles the onboarding of new VNFs, manages the day-to-day operations, and interfaces with the vendor community.
Industry expertise Comcast Business is the leading multiple system operator (MSO) in North America, with a long history of adopting and implementing innovative solutions such as its X1 platform.	**Presence** Comcast Business covers over 45% of the premises in the U.S. and is able to provide full nationwide coverage via its network partners.	**Price** Comcast Business is unencumbered by legacy technologies, particularly multiprotocol label switching (MPLS), which enables the company to be more competitive on price and provide a stronger value proposition.

In addition to the benefits a platform approach offers businesses, Comcast Business also provides:

- **Dashboard portal —** ActiveCore comes with a customizable dashboard portal that provides the end user with transparency and visibility in a single pane-of-glass view that is accessible via desktop, mobile and voice.

- **Insights —** Comcast Business can offer its ActiveCore users insights, providing visibility into the network down to the port level.

- **Road map —** ActiveCore is an extensible platform, and many VNFs and additional capabilities, tools and features are slated to be onboarded to the platform going forward. This is in contrast to what other vendors are bringing to the market, namely point solutions for individual SDN/NFV use cases.

- **Network —** Comcast Business' network is gig-ready across its "on-net" footprint, which is critical to deliver high-capacity bandwidth at low latency.

- **Staying power —** Comcast Business is a well-managed organization, and its financials are solid.

- **Vision —** Comcast Business firmly believes and is investing with the mindset that the virtual layer extends capabilities past the physical and that SDN is the future architecture businesses will employ as they evolve into digital enterprises.

Comcast Business' ActiveCore platform and SD-WAN offering provide businesses with a secure, scalable and cost-effective solution to drive their SDN/NFV initiatives. Comcast Business is not encumbered by legacy technologies, particularly MPLS, meaning the company is more focused on maximizing the business value to its customers than how to balance the impact of disruption on its business model. Comcast Business' feature-rich road map for ActiveCore ensures businesses will have access to the VNFs they need in the way they need them to drive their business's digital transformation forward.

CONCLUSION

As businesses increasingly adopt SDN/NFV to transform their ICT operations into digital environments, most will require help navigating their transformational journeys. Comcast Business' vision for SDN/NFV, coupled with its foundational ActiveCore platform running over its best-of-breed, gig-ready network, makes the company the right strategic partner to help businesses proceed in their evolution toward becoming a digital enterprise.

ABOUT TBR

Technology Business Research, Inc. is a leading independent technology market research and consulting firm specializing in the business and financial analyses of hardware, software, professional services, telecom and enterprise network vendors, and operators.

Serving a global clientele, TBR provides timely and actionable market research and business intelligence in formats that are tailored to clients' needs. Our analysts are available to further address client-specific issues or information needs on an inquiry or proprietary consulting basis.

FOR MORE INFORMATION

TBR has been empowering corporate decision makers since 1996. For more information, visit www.tbri.com.