



5 Must-Have Skills for Selling SDN and NFV

By Jeffrey Burt

Channel Partners™

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About the Author



JEFFREY BURT has been a journalist for three decades, with more than half that time spent covering enterprise technology for eWeek. During his years as a senior editor, Burt wrote about all things data center, including processors, GPUs, servers and networking gear, as well as PCs, collaboration tools, virtualization, the cloud, SDN and, more recently, emerging technologies such as artificial intelligence, deep learning and autonomous vehicles. He continues to write about technology for a variety of publications.

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5 MUST-HAVE SKILLS FOR SELLING SDN AND NFV

CUSTOMERS WANT NEW SERVICES, AND THEY WANT THEM FAST. BUT NETWORKS, WITH THEIR STILL

primarily manual upkeep, are pumping the brakes. The speed benefits of virtualized servers and storage, hyperconvergence and cloud are largely moot when programming changes to the network can still take weeks or months — a lifetime for customer IT teams trying to meet the demands of emerging workloads, like big data, analytics, mobility, advanced security and the Internet of Things.

What's going to break the bottleneck? Network virtualization.

The SDN/NFV Breakthrough

Software-defined networking (SDN) and its cousin, network functions virtualization (NFV), are changing the face of data center networks by decoupling the control plane from the underlying hardware and enabling programming and network tasks, such as load balancing, firewalls, routing, and intrusion detection and prevention, to be done in software. The result will be networks that are programmable, agile, easily scalable and more affordable. You can find more technical details in [this related report](#).

Network virtualization technologies are in use by carriers now and gaining traction in enterprises, driven by digital transformation and continued growth in cloud computing. IDC says the SDN market will grow almost 54 percent through 2020, hitting \$12.5 billion by that final year.

Verizon, AT&T and other hyper-scale data center operators have ambitious projects underway to transform their networks using SDN and NFV. Most of that is work is being used internally to improve performance, lower costs and add flexibility and efficiencies to their own operations. But some aspects — notably, wildly popular software-defined WAN services — are becoming customer-facing.

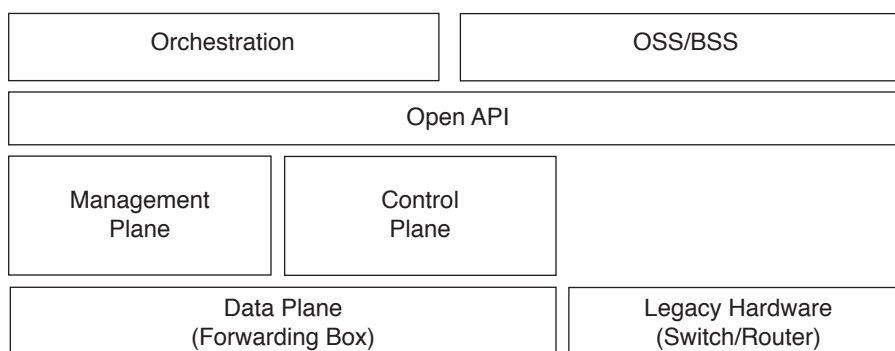
Delivering networks-as-a-service by leveraging SDN technologies is the future. Just look at how quickly the market has embraced SD-WAN — to the tune of \$6 billion by 2020, up from \$225 million in 2015, says IDC.

Verizon's SDN/NFV Vision

In February 2016, Verizon published an [SDN-NFV reference architecture](#) built around enabling logically centralized control across multivendor and multilayer networks. Its stated goals:

- **Add operational efficiencies** such as networkwide elasticity and scalability, automation up and down the stack, and dynamic traffic steering and service chaining
- **Enable business transformation** including time-to-market improvements, elimination of point solutions, agile service creation and rapid provisioning, and improved customer satisfaction.

This happens through separation of the control and data planes:



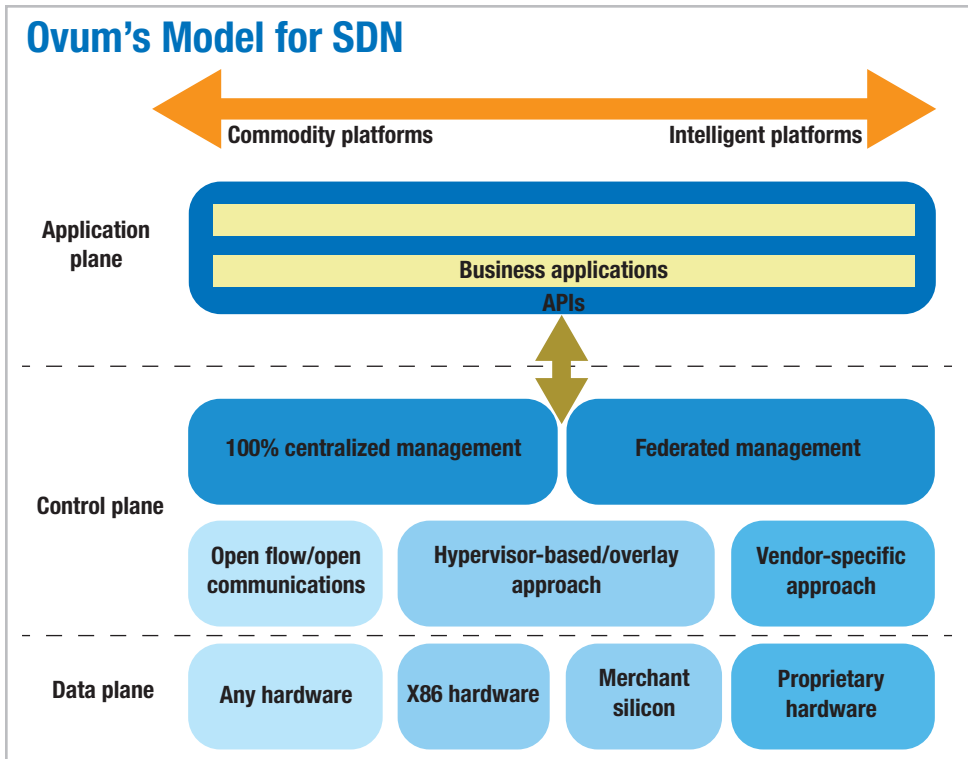
Source: Verizon

Benefits of this separation include the ability to virtualize network functions, enable programmatic control of the network and computational resources, standardization, easier hardware resource management and allocation and pervasive automation for better responsiveness to business and application needs.

You need to make sure your smaller customers aren't left behind. A company needn't own a data center to get benefits. Just as cloud leveled the playing field between enterprises and SMBs, being able to buy networks and related technologies as services will help customers immensely.

It will also help your bottom line. In fact, in its latest [SDN Market Landscape report](#), Ovum says that the services approach to SDN has the greatest potential, with providers and partners called on to “perform bespoke integration between different solutions so that a unified SDN service can be offered to customers.”

That is, you need to abstract complexity.



In arguing for a services approach, the consultancy also points out that it took a decade for server virtualization to go mainstream because of siloed IT team structures. SDN will even more radically change internal roles and responsibilities. Thus, despite anticipated benefits, adoption of SDN in the enterprise, while underway, has not progressed as quickly as analysts expected based on the benefits.

Another factor holding back network virtualization and SDN technologies is an emerging skills shortage. Network virtualization involves choosing the best topology, managing integration with the underlying physical infrastructure, understanding routing, building in security and analytics, orchestration and automation, VM and/or container mobility ... in short, it takes smarts.

Enterprises “are looking for something that makes the network easier to run,” said Zeus Kerravala, principal analyst with ZK Research. “Traditional networks are complicated. They have a lot of manual processes and need a lot of people.”

Kerravala said SDN isn't going to improve complexity, at least in the foreseeable future. “It's not plug-and-play,” he said.

Cue the services opportunity.

Complexity, an expected skills gap, pushback by internal rank-and-file IT teams and disparate approaches to SDN in the market add up to a need for partners that can help customers launch and run their SDN and NFV environments, and thus deliver the speed and agility demanded by the business.

SDN Scorecard

Top players in SDN include on the vendor side:

- [Brocade](#) uses the OpenDaylight SDN controller architecture and supports OpenFlow. It was a founding member of the OpenDaylight Project.
- [Cisco](#) has three SDN offerings: The Cisco Programmable Network (PN) and Cisco Programmable Fabric (PF) options are for mega-scale data centers and very large enterprises and service providers, respectively. Cisco aims its Application Centric Infrastructure (ACI) at enterprise customers down to SMBs.
- [Dell](#) separates the operating system, the data and control planes, and the physical and virtual network to offer a more flexible and open approach. Its solutions are aligned with the Open Compute Project, and customers have several operating system choices including Dell Networking Operating System, Cumulus Linux and Switch Light OS/Open Network Linux.
- [HPE](#) is also OpenFlow compliant and offers open APIs and support for more than 50 switches under the Virtual Application Networks (VAN) umbrella.
- [VMware's](#) NSX network virtualization platform contributes to the company's SDDC approach.

Open source options include:

- [OpenDaylight Project](#): OpenDaylight is the largest open source SDN controller, and the community includes solution providers, individual developers and users working together.
- [Open Networking Foundation](#): The ONF is a nonprofit, user-driven organization dedicated to accelerating the adoption of SDN and NFV. The group works to “transform networks into agile platforms for service delivery while streamlining network operations by leveraging the DevOps model with cloud, open source and whitebox efficiencies.”

What's Driving This Train?

The key driver behind most enterprise technology innovation is transforming IT to make it more responsive to business demands, says Ovum, and this is no different.

“SDN is a core technology that sits at the heart of this transformation,” wrote Roy Illsley, Ovum principal analyst, infrastructure systems. “The potential to radically change the approach to managing the delivery of services through more automation, and real-time configuration, is its core attraction. SDN will enable services to operate at the speed of business, and this is fueling the thirst for more information about how to deploy SDN effectively.”

To succeed, partners need a grasp of the various levels of abstraction, the integration work that needs to be done within the customer's environment and lots of expertise: creating policies and procedures, setting configurations and sorting among proprietary and open source architectural options.

SDN/NFV Certifications

Certification programs tend to be either vendor-specific or offered by open source bodies. Leading programs include:

- **Cisco** offers three [network programmability specialist certifications](#) aimed at application engineers, programmability designers and programmability developers as well as a pre-learning course for network engineers.
- **HPE** offers a range of [certs specific to its ASE FlexNetwork](#) technology.
- The [ONF-Certified SDN Professional Program](#) is available in associate and advanced levels. The ONF promises “a strong foundation of vendor-neutral knowledge and skills validation for engineering professionals wishing to improve their careers and gain advancement in the world of software defined networking.”
- **VMware’s** [Network Virtualization certifications](#) are specific to NSX and span five levels of expertise, from associate to design expert.
- There are also private certification and trainings, including the [SDN Academy](#) and [Perpetual Solutions](#).

“All of this stuff seems really easy,” said Andre DuFour, director for engineering at technology consultancy BCM One. “A lot of people believe that you just press a lot of buttons and something happens. With SDN and NFV, it looks easy on paper, but there is a lot of complexity, a lot of coding and integration. It’s not just straightforward.”

Businesses that will turn to channel partners and managed service providers to do much of that work for them are less interested in how the technology works and more interested in what it does for them.

“We’re all fruit pickers,” said Michael Bremmer, CEO of Telecomquotes. At one time, people worked the land, worrying about everything from soil to rain to the plant’s root system. Now, people just want the fruit. Businesses increasingly are the same when it comes to IT.

“They want the result,” Bremmer said. “People don’t have the time to worry about how it works. They just want it to work. ... Today, the people who provide services are the ones who are going to win. The more complicated this stuff gets, the more [businesses] need us.”

The 5 Must-Have Skills

Before your customers ask you to help them with the abstraction software, protocols, programmable interfaces and integration inherent in SDN and NFV initiatives, you need to build up the skills to deliver these services.

Here are five areas your people will need to master. It’s not a comprehensive list by any stretch — you’ll also need a grasp of the main vendor players and a solid grasp of networking protocols. There are certifications offered; see “SDN/NFV Certifications,” above. But these are often overlooked.

1. Software development. So much of network virtualization is software-based — much of it open source — that channel partners will need to be able to program in the most widely used languages. That includes Python and management tools like Puppet and Chef.

In addition, vendors are offering a broad range of products that need to be made into a cohesive solution. That work will fall to the channel, which will need to be able to securely use APIs for integration. “It’s not the old model where you just sell a product,” said Michael Davis, CTO of CounterTack and president and CEO of InClaro, a security consultancy. “You need to be able to support and service it. You need to learn new languages. The reality is that companies are buying products that all have APIs, so they have to integrate them.” Most are looking for partners that can do that work.

2. Business advisory. Channel partners must be able to think strategically, said Telecomquote’s Bremmer. We’re well beyond just selling a box that will need replacing in three or four years. Customers want IT to make the business faster, more scalable and nimbler. They don’t care about the nuts and bolts. “Now it’s all software,” Bremmer said. “It’s a totally different sell. People are much more interested in outcomes. It’s not SD-WAN, it’s not SDN, it’s the result. The one who can put a business plan together for work that is applicable, they’ll win, and they’ll win big.”

BCM One’s DuFour agreed. Channel partners need to understand their customers’ business goals and the verticals they play in, and design an environment that includes SDN and other network virtualization technologies that fits within those parameters.

In addition, partners need to be generalists, familiar with all parts of IT. In a virtualized and software-defined environment, you need to understand not only the SDN technology that’s being put in place, but also how it fits in with the broader IT infrastructure, said ZK Research’s Kerravala.

3. Compliance. While not the first thing you think about when discussing networking, partners do need to understand the compliance obligations businesses are facing. For example, immature APIs that don’t allow for granular security controls could run a retail, financial services or health care customer afoul of PCI-DSS, Sarbanes-Oxley, HIPAA and other government and industry regulations. Companies must adhere to standards regarding the management and transmission of data, and the channel needs to stay on top of an evolving compliance landscape and be equipped to design IT environments with the vertical in mind, said DuFour. “Too many businesses overlook compliance,” he said.

4. Existing cloud services. Analysts expect SDN/NFV architectures to eventually align with current cloud management platforms. This will be necessary for orchestration. Being able to design, deploy and manage hybrid cloud environments encompasses more than just SDN, but they go hand in hand, said Davis. Whether a customer uses OpenStack, CloudStack or a proprietary stack, you must ensure SDN/NFV solutions are compatible and stable.

5. Budgetary considerations. Software-defined technologies drive financial changes for both partners and customers. For your business, the shift from selling product to selling services, from getting payment upfront to relying more on recurring

revenues, will accelerate. For their part, customers are comfortable moving from capital to operational spending in most areas. Networking will get added to the list. After years of server virtualization and with the rise of cloud computing, both sides are becoming used to it — though not everyone is happy.

“If I’m used to making \$100,000 a shot and now I’m making \$100,000 over three years, that’s a change,” Bremmer said.

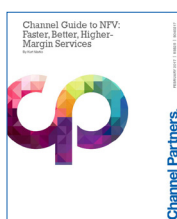
Helping customers see the benefit of multiyear contracts rather than one-time upfront prices is all about explaining what’s in it for them. “People don’t like change unless that change benefits them,” he said. “People will accept and embrace change only once they understand the benefit of the change compared with the path of not changing.”

Buying Outside the Box

Part of that change means helping customers break away from the habit — and comfort — of buying boxes and fixed lines and embracing software and services across the board. InClaro’s Davis said one reason adoption of network virtualization technologies is not ramping as quickly as some expected is because businesses are not buying a virtual load balancer or firewall on their own. Most SDN deployments are part of a larger IT transformation project or bundled into other products they’re purchasing.

However, with the broader adoption of server and storage virtualization technologies and the growing use of cloud computing, end users are increasingly more comfortable with letting go of their boxes. Customers are turning to channel partners to help them make the move into a software-defined IT world. Are you ready?

Related Reports



[Channel Guide to NFV: Faster, Better, Higher-Margin Services](#)

Services delivered in a software-defined model — from firewalls to UC to SD-WAN — represent significant opportunity for channel partners. In this Report, we provide a primer on network functions virtualization (NFV) and related technologies, tips on how to sell customers on the concept and recommendations for moving your business into the virtual era.



[SD-WAN: Channel Seller's Guide](#)

The SD-WAN trend is on fire, especially in lucrative verticals like retail. The trend is sparked by inexpensive yet blazingly fast broadband, more use of the cloud and a new “mobile-first” mentality. For partners, value-added services, bundling and upsell opportunities can increase already rich monthly recurring revenues.