Get past the FUD of virtualized, software-defined services.

Why savvy IT professionals are needed
in federal agencies more than ever.

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Software-defined networking (SDN) and network functions virtualization (NFV) are changing the way applications and network services are deployed in federal agencies while delivering undeniable benefits.

There is a perception, however, that deploying these technologies changes how IT staff do their jobs – sometimes even eliminating functions previously performed by people. Fundamentally, virtualized services mean there are fewer physical devices to manage. Managed services automation replaces a myriad of manual processes, thus offloading work from network administrators, developers and other support professionals.

It's no wonder that there is fear, uncertainty and doubt (FUD) in many federal IT organizations. The good news is that if you're an IT professional, you're still very much in demand. But with virtualization, the role of IT is evolving, CIOs need to cultivate a new culture of change. IT personnel must adapt and train for new roles, accepting redeployment as an opportunity to drive mission critical initiatives and strategic value.

The new normal

The benefits of virtualization, SDN and cloud services are clear. They control physical assets or capital expenditures (CapEx) with less hardware to buy, simplify and speed up the ability to deploy, change or take down services, and bring massive scalability and flexibility. Services that incorporate these new innovations, like software-defined wide area networks (SD-WAN), can add great cost and operational efficiencies. These solutions now enable you to rapidly deploy services and activate devices, branches and applications. Mission or operational objectives can be quickly turned into technology-based solutions.

> The benefits are clear. Virtualization, SDN and the cloud can help you simplify, accelerate and scale your services easily. Ignoring them could mean falling behind.

You can move quickly to new network solutions using managed virtualized services. Do it strategically, where needed. Providers like Verizon have been working with companies of all sizes and types for years now and we know you're concerned about loss of control and the need to respond quickly to end user needs. So are we.

But with new tools come new ways of doing things. With a virtualized, programmable, cloud services environment provided as a managed service, high IT CapEx can be a thing of the past, replaced by clearly defined monthly OpEx charges based on usage. No more need for over-capacity planning. End- to-end network software intelligence allows policies that include proactive network diagnostics that safeguard high performance and promote efficiencies. End user support is prioritized to make sure questions and issues are promptly handled.

Case in point: SD-WAN

SD-WAN is an example of the type of digital transformation that is changing the roles of federal IT professionals.

Mobile, cloud, video, VoIP, presence, Internet of Things (IoT) and applications are driving increasing agency or enterprise-wide bandwidth requirements. On the flip side, these applications are spotlighting the need for higher quality of service (QoS) and strong security. They pose particular challenges to the WAN that connects mobile users and branch offices to headquarters.

To handle the load with high quality of service and security while managing their costs, many federal and enterprise IT organizations are looking at SD-WAN as a solution.
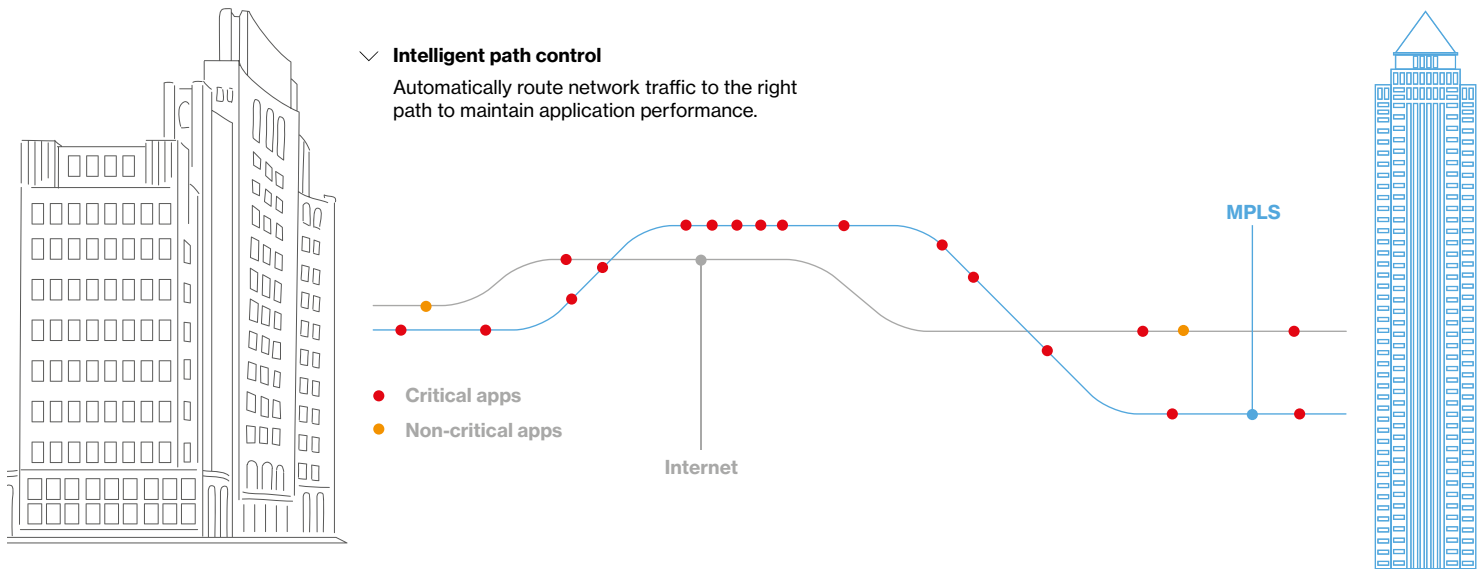
SD-WAN technology lets your agency route mission-critical traffic (e.g. applications considered essential for customer interaction as well as workforce productivity) on a policy-defined app by app basis through high-quality private WAN connections, while offloading non-critical traffic to internet and broadband connections. It uses the SDN architecture, which separates the control plane from the data plane, to dynamically assign bandwidth and other resources as the demand changes.

> Prioritize your network traffic with SD-WAN and keep essential applications running on time. Push mission-critical requests through high-quality private connections, while moving non-critical traffic on to public ones.

Within SD-WAN, intelligent path control helps improve application performance by providing path selection based on measured network performance criteria such as delay, jitter, and packet loss. Critical network traffic takes the most efficient path and all traffic can be routed, failed over, and load-balanced across all available links while maintaining a consistent end user experience.

This technology enables agencies to have flexible, highly secure, site-to-site connectivity through the use of an over-the-top network on the underlying infrastructure. It lets you use a combination of both MPLS private connections as well as internet and broadband connections in a single unified secure network.

That's SD-WAN in a nutshell, a terrific solution that frees you from the drudgery of routine network management. You no longer have to travel to remote branch offices to tweak network configurations manually. Adding bandwidth to those branch networks no longer requires programming and on-site hardware installations. Connecting multiple technologies is fast and simplified because you manage application performance instead of devices. And it's all done centrally through a simple portal Graphical User Interface (GUI).

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Whitepaper: Get past the FUD of virtualized, software-defined services.

Intelligent path control
Automatically route network traffic to the right path to maintain application performance.

MPLS

● Critical apps
● Non-critical apps

Internet

From tactical to strategic

Technologies like SD-WAN are among the drivers moving IT from the back office to the front office. In the era of digital transformation, IT is rapidly getting out of the business of just maintaining systems to freeing staff to focus on innovations, mission development and customer experience.

Agencies are increasingly looking to IT departments as innovation partners. No longer is IT viewed as transport and storage but an integral part of mission innovation and creativity providing best in class solutions in support of ever evolving day-to-day operations. IT departments are now tasked with interfacing with hundreds of potential solution providers while managing exponential growth and complexity in applications, connected devices, data center infrastructure all under budget constraints.

With all of these dynamic changes, how should federal IT professionals respond?

It's time to upskill

As CIOs have identified, the ability to maintain talent pools covering every required technical skillset is challenging due to budget, resource constraints and competing private sector recruitment. With government accelerating acceptance of enterprise solutions, agencies should train for the future. Training staff based on leading enterprise technology trends and support roles for managed services will help cultivate a culture of pride and readiness.

Growing IT skillsets through certifications and technical experience will remain a priority. Programming and development skills will still be needed, but Computerworld's Forecast 2017 survey of IT professionals found that both project management and technical support were among the top 10 most sought-after IT skills.

Here are some emerging areas that we believe will be at the forefront of digitization:

• Application development

• Business intelligence and analytics; big data

• Cloud computing and software-as-a-service

• Mobile apps and device management

• Cybersecurity, compliance and governance

• Machine learning

• Project management

• User interface design

Be an IT accelerator: embrace managed services

As mentioned, another aspect of the changing role of IT is the hyper-accelerated timeframes of a modern agency. The world is now accustomed to services on-demand. To respond, agencies must be savvy and strategic in how they use people and resources.

That's why IT departments are increasingly choosing managed services for a variety of network needs. Outsourcing network management and security, for example, lets your agency's IT organization focus development and support resources on mission execution and efficiencies. The best managed services resources focus on proactive measures to further maintain smooth operations and pride themselves on being super responsive to end users.

Get beyond the FUD

IT organizations need to embrace the opportunities and benefits created with digitization. Driving a culture of change should not be feared but accepted as opportunities for career growth. With new technologies such as SDN, IT will continue to move from being just a back office cost center to a strategic and indispensable resource.

With so many new ways to design, make decisions, serve customers, partner, support, measure, collaborate and train with the right skills, IT resources are increasingly in high demand.

Verizon and Cisco can help IT professionals better understand how technologies like SDN can result in positive outcomes for your company and your role within the organization.

Visit us at **www.getsdwan.com** or
www.verizonenterprise.com/fed-connectivity
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