

## IBM's O'Connell and Currie Discuss How to Incorporate Automation in the WAN

*In today's business model transformations, network services need to be consumed in a flexible, agile, optimized, and cost-effective way. With its Multi-Network WAN Service (MWS), IBM hopes that automation above and across various providers, edge technologies, and virtual functions will address those customer needs.*

*In this interview, IBM's Brian O'Connell, Distinguished Engineer and Master Inventor, and Steve Currie, Distinguished Engineer, talk about IBM's networking approach, which has a laser focus on the businesses and applications of its clients, rather than the traditional approach of focusing primarily on the network itself. According to IBM, SD-WAN is not just a new technology rollout but a means toward new consumption models.*

### **SDxCentral: What are some of the challenges that enterprises are experiencing with the WAN?**

Currie: I've been in networking for more than 30 years and software-defined networking (SDN) for the past 5 years, so I've seen a lot of market changes happening over time. What's interesting is that the industry upheaval we're seeing today is very much like what happened in the late 1990s, when technologies were changing rapidly and business models were evolving.

Today, our clients are saying: "We need to transform our business in a cost-effective way, and We need to do it with greater bandwidth because our applications are demanding it, and We need to do it all very securely." So those kinds of changes in the marketplace are driving traditional players to adopt new models and technologies, and giving new players opportunity to cause disruption. Overall, our clients are pushing hard for flexibility, cost efficiency, and security.

**O'Connell:** Steve and I come from different backgrounds. I'm a software engineer by trade, and a lot of what I do focuses on automation. When it comes to the challenges that enterprises are facing in the WAN, I approach it from the application, software engineering and DevOps perspective. The challenge from the application perspective is that, historically, WAN and networking are often seen as something of an inhibitor. For example, you have app developers pushing changes out to production, working with site reliability engineers to help accelerate changes and help businesses meet their goals, but the WAN and the networking are starting to catch up in terms of automation and orchestration to support rapid deployment and rapid changes to applications. The challenge among enterprise networking is to keep up with the rapid changes that developers are pushing out.

**Currie:** A lot of what Brian is talking about speaks to flexibility and the need to be much more responsive to

the application. The work he's doing in orchestration and automation will bring applications more quickly to the WAN but also introduce greater demands on the network, and that leads to the need for greater capacity and greater security as these applications are pushing things out. When we look at the need for capacity, the questions are: "How can I scale bandwidth on demand more quickly using orchestration? How can I respond to these application needs?" IBM's perspective is not necessarily, this is a new technology and you should use it, but rather, How do I enable our clients, their businesses, and their applications to meet our clients' needs and objectives? It's more of a top-down approach, considering the application going into the network. It's a change in perspective. The application and the business are now able to drive the technology to where clients need it. It's an exciting time!

#### **What is IBM doing to solve some of the issues you've mentioned?**

**O'Connell:** The difference is that IBM thinks of network transformation as more than just refreshing the network with new equipment. We see SD-WAN as a complete transformation of the network. We think about where we can drive automation and how we can integrate network automation into the broader orchestration and service automation goals that an organization might have. The way I think about it is that customers don't simply automate their network as an end goal. They automate the network to enable services and to reach their consumers. Whereas traditional providers might have a network end view, we take the application view. We think about the situation in such a way that the network is there to enable the application and to enable the experiences that our customers want their customers to have.

**Currie:** And this business model transformation that Brian is talking about opens up great possibilities for our clients as far as how they're even able to account for the cost of a network. "Can I make it part of my facility cost for my branch? Can I make it part of my real estate cost?" Now, At IBM, we're extracting the functionality that is valuable to the application and business, above the physical connectivity, and bringing in a new market and new business models so that the physical layer becomes part of the real estate and the physical needs.

We're now able to use different technologies at the base level while having consistent delivery of functionality, of security, and of capability at a higher level. The base transport will be a mix of traditional MPLS and broadband Internet using either business class or consumer grade based on the business requirements and the geographic locations. Our clients can obtain cost efficiencies in some parts of the world using consumer grade broadband with sufficient reliability and performance for their needs, while other areas need the stability of MPLS. Global clients are no longer locked into a restricted set of technologies by using SD-WAN solutions. The higher level capabilities brings in network functions virtualization (NFV) and how I'm able to deploy key functions at the right place in the network, functions like firewall, intrusion detection and prevention, optimization, and business specific functions.

#### **Many enterprises are considering a hybrid cloud approach. How does IBM's SD-WAN solution support a hybrid cloud environment?**

**Currie:** At the connectivity level, within IBM SD-WAN, we're utilizing the right transport and the right connectivity for specific applications and location types. A customer might be able to use Internet broadband, or one particular telecommunications provider for MPLS, or another carrier's MPLS services—and they can mix different carriers together to achieve the optimal coverage. And this is particularly important for global companies. It aligns very nicely with same-country clients, but as we get into international and multinational corporations, having provider flexibility gives them cost optimization, and it gives them the best technical solution with the right coverage and the right service-level objectives. It gives them better control over their spend and their capabilities within the WAN. That's one of the key features of what we're doing with SD-WAN.

**O'Connell:** Our solution was built to support hybrid cloud from the very beginning. Our global network peering points (GNPP) with backbone and regional nodes really goes beyond supporting hybrid cloud. Our solution really supports multi-cloud. A lot of our customers are moving toward a multi-cloud approach, and one thing that's great is how it leverages our global network peering points is that we can easily facilitate that multi-cloud.

## What makes IBM's SD-WAN solution different from other WAN offerings?

**O'Connell:** IBM is providing the ability to optimize between service providers in regions for a particular deployment. As far as price, historically it's best to go with between three and five service providers per transport, for a particular deployment. Because IBM is transport provider-agnostic, it lets us work with our customers and deliver them the best value for the SD-WAN solution. And because the GNPP is co-located with cloud providers and telecommunications partners, we get optimized behavior with points of presence within the regions that our clients need. So, to me, that is the key differentiator: that transport provider-agnostic view of multi-network WAN services delivered with automation.

**Currie:** On top of that, we take these providers and present them as one service to our clients. So, they don't face the challenge of managing multiple providers; we do that on their behalf. We're doing all the service assurance for them, monitoring availability and capacity, and working with providers on the underlying transport to provide the right levels of service. Our clients don't have to deal with all the complexity, so they experience a sense of comfort and efficiency. And that ties into how we're driving automation into all aspects of the service. As we see opportunities for gaining efficiency with automation, we're applying that rapidly in a DevOps model. It's using a lot of what's going on in the industry, but doing it in a cross-carrier, cross-transport way rather than just within one specific infrastructure.

**O'Connell:** From my software engineering background, I view it as a transport provider abstraction in that we can deploy services across different transport provider implementations, but the experience is the same for the consumer. That's a key differentiator—the experience, the billing, our ability to abstract working with those providers for those clients.

## Describe some of the cost benefits that enterprises will experience if they migrate to IBM's SD-WAN service.

Steve Currie: We talked about the ability to use the right technology for the right situation so that I can optimize based on who has the greatest presence and cost for our clients in a specific region, country, or town—and use

that to the advantage of our clients. It's not always MPLS or traditional transport services; it's also about who's the best broadband provider. If the client has availability concerns and wants multiple providers or different types of technologies to provide greater assurance, we can do that in a very cost-efficient way because we can go to the right broadband provider and get the right solution there, as well as the right MPLS, and do a hybrid WAN solution effectively. It gives our clients a new negotiating point with the various providers because they can bring it together in one network for their enterprise that can be managed securely at the right service levels.

**O'Connell:** To me, it's all about the ability to leverage broadband Internet connectivity; to balance the capacity, availability, and security requirements of specific applications; and to abstract that transport provider implementation from the customer so that we can go into various markets and look at different transport providers and choose the most cost-effective provider for that customer's needs.

## Any final thoughts?

**Currie:** This is a tremendous opportunity for our clients to take advantage of rapid developments in the WAN or networking space. This opportunity allows them to transform their IT business to drive technology to support them rather than shape them. Historically, networks shaped the way business operated, but today we can shift that perspective in such a way that the business can shape the network to best address its market and leverage different technologies and capabilities to meet their requirements. The result is greater flexibility, greater cost control, and an improved security posture. In this rapidly changing and strict regulatory environment, that security angle is essential to the business transformation.

**O'Connell:** This is the most exciting time in networking that I've experienced. The entire landscape is changing to software-defined—both LAN and WAN. It's a great time for customers to reevaluate what they want their network to look like, and how their network can enable their company to meet the demands of their customers.

For more information, please visit the [IBM Network Services page](#).