

SD-WAN: Building The Business Case & Understanding Your ROI



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Takeaways

• SD-WAN provides new options for providing connectivity to branch and remote offices, retail locations, and other sites.

• Customers can mix and match links including traditional private circuits, business broadband, Direct Internet Access (DIA), and LTE

• SD-WAN can use all links at a site simultaneously to take full advantage of available bandwidth. Customers can also set policies around which applications should use which links. Policies can account for security, performance, and other considerations.

• Customers can choose from a wide range of SD-WAN options, including appliances, software delivered via CPE, managed services, and private networks.

• Before creating a vendor shortlist, IT must build a business case that accounts for resiliency and redundancy, QoS/QoE, deployment options, the use of public Internet, and other considerations.

• Executives may expect dramatic savings from an SD-WAN solution. IT must build a financial model that tallies current costs and compares them to a proposed solution to evaluate where, and if, savings will occur.

• This model must account for the price of current access circuits, voice/telephony costs, hardware and software, licensing, and the cost of WAN connectivity.

• Compare features and deployment options among vendors to build your shortlist for further investigation and testing.



Why You Should Read This Whitepaper

Software Defined WAN (SD-WAN) is quickly becoming the de facto standard for modern WAN connectivity. With SD-WAN, customers can provision multiple connection types at branch and remote sites, including business broadband, LTE, and private WAN technologies such as MPLS.

Customers can define which links applications will use based on business requirements and link performance, use local Internet breakouts to connect directly to cloud services, and prioritize real-time or critical business applications.

Organizations considering SD-WAN have dozens and dozens of products and services to choose from, most of which offer similar features and capabilities.

This paper aims to help potential buyers understand their business requirements, calculate an ROI, outline options from a broad (though not exhaustive) list of vendors, and help you build your own shortlist for further investigation and testing.

This paper then walks through three theoretical SD-WAN deployments based on large, medium, and small organizations to show how IT and business teams weigh their requirements to find the right solution.

Finally, an appendix compares 21 features and functions from 10 vendors.



The SD-WAN Business Case: Translate Tech Into Operational Requirements

Before you compare technical features and capabilities of SD-WAN products, you need to build a business case. A business case enumerates goals and outcomes from the perspective of users, business leaders, and financial stakeholders. It should describe, at a high level, the problems you're trying to solve and the benefits you anticipate from the technology.

Your objective with the business case is to convert technical features and functions into tangible operational benefits for end users and customers.

Be prepared to do some digging to understand the issues that users have, and where there are inefficiencies and frustrations. It's very common for engineers to be so focused on the technology that they are largely disconnected from users' needs.

Don't be afraid to ask questions and uncover the truth of how the business operates and how users really utilize applications. Be prepared to dig into what the pain points are in the organization.

The following are some SD-WAN considerations for making a business case. Prioritize these considerations based on your own situation, and add your own to reflect your organization's needs. These considerations can be mapped to technological capabilities later on, so this list will be very useful when evaluating SD-WAN solutions. Use your list to develop your selection criteria.

Resiliency & Redundancy

Resiliency and redundancy are likely at the top of everyone's list. SD-WAN provides failover, load balancing, and redundancy among multiple circuits to avoid outages or service impairment.

Most SD-WAN solutions can measure and steer around "brownout" conditions such as packet loss, jitter, and high latency. They will balance traffic loads across multiple pipes to take full advantage of available connectivity.

Obviously, maximizing uptime helps maintain productivity and prevents work stoppage.

Quality of Service / Quality of Experience

Choppy or inaudible voice calls frustrate users and customers alike. Equally as bad are applications that load slowly or simply don't work.

A good SD-WAN solution will steer applications based on performance needs, and will send high- priority traffic over the best available link to meet service levels.

Some SD-WAN products employ remediation technologies such as forward error correction (FEC/ packet duplication), jitter buffering, and TCP optimization to maintain a good quality of experience, particularly for real-time protocols like voice and video.



Deployment Agility

With mechanisms like Zero Touch Provisioning (ZTP) and auto configuration, SD-WAN deployment and turn up of new locations is relatively simple.

The business can take advantage of these features to get a site up and running in weeks or days by deploying with a mobile wireless service. Compare that to waiting months for a dedicated private circuit from a carrier. Acquisitions can be integrated into the network with similar ease.

Features such as source NAT'ing on the WAN may be available to aid in overcoming IP address overlap issues, which are very common when combining legacy networks. Those with growth or acquisition/ merger plans should bear this in mind.

SD-WAN can make deployment agile enough to keep up with tight business deadlines.

Local Internet Access/Internet Breakout

In most MPLS deployments, you either have to backhaul Internet access to a strategic point on the MPLS network as a drain point (usually a data center, HQ location, or network firewall from the provider) or perform some clunky policy-based routing trickery onsite to send Internet- bound traffic out a local DIA or broadband connection.

These options are suboptimal and usually result in poor performance. They make it difficult to inspect traffic and are complex to manage. SD-WAN simplifies the configuration and operation of "Internet breakout" by allowing you to configure per-application or per-class business policies in addition to traditional source VLAN and/or subnet routing to steer traffic with inherent backup mechanisms.

SD-WAN's key difference is the ability to choose a path based on circuit performance to bypass network issues and outages. Some SD-WAN vendors have service chaining capabilities to send traffic to third-party, cloud-based filtering services. Sending the traffic directly where it needs to go reduces latency and improves performance.

Leveraging All Available Connectivity

Many traditional WAN deployments with redundant paths only use one path at a time, which means the redundant path sits idle. This is an expensive uptime insurance policy.

SD-WAN can balance traffic across paths, per flow or per packet, using all available connectivity so that no bits per second are wasted. This benefit should also be considered in your ROI analysis.

Managed Vs. Self Installed

Managed service providers can take a lot of the heavy lifting of deploying, operating, and maintaining an SD-WAN solution, but the trade-off is additional cost and, depending on the solution, some loss of some control.

While SD-WAN vendors promise simple deployment, you have to consider ongoing operations. If your team is already spread thin, having an MSP manage your SD-WAN may be worth the money.

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Key Considerations For Calculating ROI And Potential Savings

Though engineers can usually demonstrate the technical benefits of new options such as SD- WAN, making the financial case may be more of a challenge.

Typically, an improvement for technology's sake will not be approved without a strong financial justification. To get the project approved, make clear the immediate or long-term savings and benefits. These benefits may include less expensive hardware or software, operational efficiencies, displacing other more costly services, or all of the above.

In general, business leaders want to see cost reductions or significant performance increases. Depending on your current network, there may not be a lot of immediate savings to be found, which can disappoint business leaders who assume SD-WAN is a quick and easy way to save money.

Create an ROI model that compares your current costs against the proposed solution to evaluate if and where savings or efficiencies can be found. When building the case for SD-WAN, consider the following:

Access Circuits

Detail the current bandwidth at each site and the cost of all the access connectivity the business pays for today. Include dedicated circuits like MPLS or DIA, broadband with DOCSIS or DSL, 3G/ 4G, fixed wireless, dial backups (yes they still exist, don't forget about them), and so on.

Be sure to note contract start and end dates to identify when you can replace these services. Bear in mind, the signature date isn't always the start date, and your contract usually starts once service is activated.

Be careful revealing too much to your service providers about your evaluation. Tipping them off can make them pressure you to renew out-of-contract services (they can usually charge you exorbitant out-ofcontract penalty rates until you renew) or try to upsell you if they think you are leaving.

We strongly advise using a telecom broker; a broker will save you a lot of legwork and can negotiate with telecom providers on your behalf. Some brokers can be engaged as a cost savings advocate, receiving a commission based on how much savings they return.

Voice

Do you still have plain old telephone service (POTS) lines or Primary Rate ISDN (PRI) circuits out there? Rates on old-school copper lines are skyrocketing as the carriers try to get rid of this aging infrastructure. You may not realize you're paying a fortune for these lines, but if you still have them, you are spending a lot more than you used to--upwards of nearly \$80-100/POTS line.

Also, are you paying a vendor to maintain old PBX systems or paying maintenance contracts? Don't forget to roll these costs into your model because there may be an opportunity to switch to IP-based voice services or a hosted voice solution. These savings alone may justify the move to SD-WAN.

WAN Dynamics, Inc.



Downtime Costs

Review the Service Level Agreements (SLAs) of current access circuits to identify your service providers' responsibilities in the event of an outage. Contrast this with what the business understands is the cost of lost productivity during an outage.

One core feature of SD-WAN is continuity of connectivity to eliminate or dramatically minimize downtime (presuming you can get connectivity from two separate providers in each location, which isn't always an option).

The SLA credits the carriers are contracted to pay out typically don't cover the full costs of an outage to your business. Credits also aren't going to do anything for lost productivity or customer frustration.

Hardware/Software

Catalog all the routers, firewalls, monitoring taps, WAN optimizers, and any other network devices on your WAN. Many SD-WAN vendors include routing, firewalls, WAN optimization, and other functions, so you may be able to decommission some branch equipment by deploying SD- WAN.

Identify if these devices are paid off, under lease, or rolled into a managed services agreement with a provider.

When it comes to managed services and leasing, remember the signature date usually doesn't mean the start date. Check to see when the devices were deployed and accepted, and then verify whether this is the start date.

Support/Licensing

Identify the annual support and licensing costs of your routers, firewalls, WAN accelerators, and so on. These can add up quickly based on the number of devices in the network. Consolidating these costs into a single SD-WAN platform can sometimes pay for the solution.

Cost per Mbps

Include the cost of the WAN per/Mbps to show how much network you are getting for the money you spend. If your costs go up overall, this number may be beneficial to your case if your bandwidth needs are increasing, because it will show an overall savings on per-bit per-second basis.

Remember to account for the fact that you can use all circuits in an active capacity.



Six Comparative Cost Models

Here are six examples of comparative cost models based on US estimates of services, software, support, and hardware.

The dual MPLS router hardware configuration is based on enterprise-grade routers.

The SD-WAN hardware pricing is based on commodity x86 hardware prevalent in SD-WAN deployments.

1. Managed	Dual MPLS/L3	VPN Monthly	Recurring C	Cost
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Dual MPLS	Active		Standby		* MRC Based on 3 Yr Term
Site	MPLS Primary	Bandwidth	MPLS Secondary	Bandwidth	Router
Headquarters / Head End	\$1,250	100Mbps	\$450	25Mbps	\$150
Remote Site 1	\$650	50Mbps	\$450	25Mbps	\$100
Remote Site 2	\$450	25Mbps	\$250	5Mbps	\$100
Remote Site 3	\$450	25Mbps	\$250	5Mbps	\$100
Remote Site 4	\$450	25Mbps	\$250	5Mbps	\$100
Remote Site 5	\$450	25Mbps	\$250	5Mbps	\$100
Total:	\$3,700		\$1,900		\$650
Grand Total:	\$6,250				

2. Managed SD-WAN w/MPLS/L3 VPN Monthly Recurring Cost

SD-WAN w/MPLS	Active		Active		* MRC Based on 3 Yr	Term
Site	MPLS Primary	Bandwidth	Broadband Secondary	Bandwidth	Managed SD-WAN	Total
Headquarters / Head End	\$1,250	100Mbps	\$100	25Mbps	\$450	\$1,800
Remote Site 1	\$650	50Mbps	\$100	25Mbps	\$200	\$950
Remote Site 2	\$450	25Mbps	\$70	5Mbps	\$130	\$650
Remote Site 3	\$450	25Mbps	\$70	5Mbps	\$130	\$650
Remote Site 4	\$450	25Mbps	\$70	5Mbps	\$130	\$650
Remote Site 5	\$450	25Mbps	\$70	5Mbps	\$130	\$650
Total:	\$3,700		\$480		\$1,170	
Grand Total:	\$5,350	Savings from Dual MPLS:		\$900		

3. Managed SD-WAN w/Dedicated Internet Access (DIA) Monthly Recurring Cost

SD-WAN w/DIA	Active		Active		* MRC Based on 3 Yr	Term	
Site	DIA Primary	Bandwidth	Broadband Secondary	Bandwidth	Managed SD-WAN	Total	
Headquarters / Head End	\$1,000	100Mbps	\$100	100/10Mbps	\$450	\$1,550	
Remote Site 1	\$500	50Mbps	\$100	100/10Mbps	\$200	\$800	
Remote Site 2	\$400	25Mbps	\$70	15/2Mbps	\$130	\$600	
Remote Site 3	\$400	25Mbps	\$70	15/2Mbps	\$130	\$600	
Remote Site 4	\$400	25Mbps	\$70	15/2Mbps	\$130	\$600	
Remote Site 5	\$400	25Mbps	\$70	15/2Mbps	\$130	\$600	
Total:	\$3,100		\$480		\$1,170		
Grand Total:	\$4,750	S	avings from Dual MPLS:	\$1,500	Savings from SD-W	AN w/MPLS:	\$600



4. Self Managed Dual MPLS/L3 VPN Monthly Recurring Cost

Dual MPLS	Active		Standby		* MRC Based on 3 Yr Terms	
Site	MPLS Primary	Bandwidth	MPLS Secondary	Bandwidth	Router (Puchased + 3 Year Support)	Total
Headquarters / Head End	\$1,250	100Mbps	\$450	25Mbps	\$10,000	\$1,977.78
Remote Site 1	\$650	50Mbps	\$450	25Mbps	\$4,000	\$1,211.11
Remote Site 2	\$450	20Mbps	\$250	5Mbps	\$4,000	\$811.11
Remote Site 3	\$450	20Mbps	\$250	5Mbps	\$4,000	\$811.11
Remote Site 4	\$450	20Mbps	\$250	5Mbps	\$4,000	\$811.11
Remote Site 5	\$450	20Mbps	\$250	5Mbps	\$4,000	\$811.11
Total:	\$3,700		\$1,900		\$30,000	
			Amor	tized 36mos:	\$833.33	
Grand Total:	\$6,433.33					

5. Self Managed SD-WAN w/MPLS Monthly Recurring Cost

SD-WAN w/MPLS	Active		Active			
Site	DIA Primary	Bandwidth	Broadband Secondary	Bandwidth	SD-WAN Appliance (Purchased + 3Year Support)	Total
Headquarters / Head End	\$1,250	100Mbps	\$100	100/10Mbps	\$7,800	\$1,566.67
Remote Site 1	\$650	50Mbps	\$100	100/10Mbps	\$3,400	\$844.44
Remote Site 2	\$450	20Mbps	\$70	15/2Mbps	\$3,400	\$614.44
Remote Site 3	\$450	20Mbps	\$70	15/2Mbps	\$3,400	\$614.44
Remote Site 4	\$450	20Mbps	\$70	15/2Mbps	\$3,400	\$614.44
Remote Site 5	\$450	20Mbps	\$70	15/2Mbps	\$3,400	\$614.44
Total:	\$3,700		\$480		\$24,800	
			Amo	rtized 36mos:	\$688.89	
Grand Total:	\$4,869		Savings from Dual MPLS:	\$1,564.44		

6. Self Managed SD-WAN w/DIA Monthly Recurring Cost

SD-WAN w/DIA	Active		Active			
Site	DIA Primary	Bandwidth	Broadband Secondary	Bandwidth	SD-WAN Appliance (Purchased + 3Year Support)	Total
Headquarters / Head End	\$1,000	100Mbps	\$100	100/10Mbps	\$7,800	\$1,316.67
Remote Site 1	\$500	50Mbps	\$100	100/10Mbps	\$3,400	\$694.44
Remote Site 2	\$400	20Mbps	\$70	15/2Mbps	\$3,400	\$564.44
Remote Site 3	\$400	20Mbps	\$70	15/2Mbps	\$3,400	\$564.44
Remote Site 4	\$400	20Mbps	\$70	15/2Mbps	\$3,400	\$564.44
Remote Site 5	\$400	20Mbps	\$70	15/2Mbps	\$3,400	\$564.44
Total:	\$3,100		\$480		\$24,800	
			Amoi	rtized 36mos:	\$688.89	
Grand Total:	\$4,269		Savings from Dual MPLS:	\$2,164.44	Savings from SD-WAN w/MPLS/L3 VPN:	\$600.00



Three SD-WAN Deployment Profiles

In this section, we've created three business profiles--small, medium, and large--to demonstrate what an SD-WAN evaluation might look like and how considerations differ from organization to organization.

Each profile includes a company structure, key applications, an analysis of core requirements, and the reasons why a particular SD-WAN vendor was selected. While these are fictional profiles, they're based on real-world engagements.

The SD-WAN selections for these scenarios do not constitute an endorsement or recommendation. Organizations have myriad choices and should investigate their options to find a vendor that will best meet their needs.

Small Business - Copper Connectors

Copper Connectors is a midwestern manufacturing company with an HQ and four geographically dispersed branch locations in the United States, as well as a manufacturing site in Asia. The IT organization is small and moves quickly. Engineers are decision makers. Copper Connectors uses a managed routing service from its MPLS carrier.

Primary Applications:

- Cloud-hosted SAP ERP
- Microsoft Office365 SaaS Groupware
- RingCentral Hosted IP Telephony
- Internal IT services include file sharing for technical diagrams and common productivity applications. Internal applications run on Hyper-V hosts.

IT Staffing:

• 2 General IT Technicians - 1 senior, 1 junior

Connectivity Profile:

MPLS network

- HQ in major metro has many connectivity options
- Remote sites are in regional business parks with limited connectivity options
- · Asian site connectivity hindered by high latency
- The company wants to reduce connectivity costs with dedicated Internet access and/or broadband

Security Profile:

At present, all traffic is backhauled to HQ/MPLS headend for firewall, IDS, anti-malware. The company is interested in local appliances or Web options for branch security.

Financing Profile:

Prefers buying as an operational expense (Opex)



The Operational Environment:

The company's primary applications are hosted in the cloud, so an SD-WAN solution with traffic optimization via a cloud-based gateway will be a strong consideration.

MPLS does not suit the application profile as well as it used to, and actually introduces more points of failure than traditional Internet access would. Ideally both public and private overlay should be supported for the transition. The company wants to prioritize voice traffic over other applications and optimize connections to its cloud-based voice provider.

Due to its small staff, the company will strongly consider managed and professional services from VARs, MSPs, or carriers.

Some MPLS sites are still under contract, so the organization will use revenue replacement on contract to replace MPLS circuits with Dedicated Internet Access (DIA), which their carrier will allow. The model desired is primary fiber-based DIA for low latency and better SLA, with a secondary DOCSIS or DSL broadband connection that will also be the local breakout for guest/ public WiFi traffic.

From a security perspective, the HQ is the only site that needs NG/UTM firewalls for mobile VPN users and inbound NAT translations to legacy servers. Remote locations will use modest built-in firewalls on SD-WAN appliances for typical Internet access. An MSP manages endpoint security for each host.

Selected Solution:

Silver Peak from a managed service provider

Rationale:

Copper Connectors chose Silver Peak, managed by an MSP, because Silver Peak offers a cloud gateway option. The company liked Silver Peak's WAN optimization capabilities, which should improve file sharing over legacy SMBv2 with its Asian site.

The managed service suits the company's preference for OpEx outlays. The company is comfortable with its existing security solution at HQ and can do local Internet breakout in Asia.

Medium Business - Hearth And Home

Hearth And Home is a skilled nursing care organization headquartered in the east coast of the US with 220 nursing facilities across North America. The organization has its own data center.

Hearth and Home grows by acquisition, but also divests locations frequently. The organizational structure imposes moderate bureaucratic complexity. Engineers need to build a business case, but they can act on it relatively quickly once approved. The IT team manages its own Cisco-based network.

Primary Applications:

- PointClickCare Healthcare SaaS application
- Microsoft Exchange groupware in the data center
- Mitel-based IP phone system hosted in the data center



IT Staffing:

• 5 General IT Technicians - 2 senior, 3 junior

Connectivity Profile:

Mix of MPLS, VPLS, and broadband networks

- HQ in major metro with many connectivity options
- · Data center on-net with many carriers
- Remote facilities are a mix of urban and rural, some with limited connectivity options.
- Facilities typically need to get dedicated service due to a lack of broadband options
- The organization wants to reduce connectivity costs with dedicated Internet access and/or broadband

Security Profile:

At present, there are some sites that backhaul to HQ/MPLS headend for firewall, IDS, anti- malware, and some sites that break out locally. The IT team is interested in consolidating its security strategy.

Financial Profile:

The company equally weighs OpEx and CapEx options.

The Operational Environment:

Applications for facility operations are delivered via SaaS, but most line-of-business applications and unified communications (UC) applications are still hosted in the data center or HQ location. IP SIP trunks delivered by the telecom carrier land in the data center into an IP PBX with redundant voice routing to the HQ.

Staff can manage day-to-day operations, but would like a support group/MSP for escalation and overflow. They would also prefer the MSP monitor circuits and ticketing. Logistics for moves, adds, changes, and disconnects (MACD) should also be managed.

MPLS and VPLS with local broadband for Internet access has served the company well, but it's too expensive, complex, and takes too long to procure. Both public and private overlay should be supported for the foreseeable future to integrate private and public connectivity solutions until contracts expire on private connectivity and they can be converted to public.

The organization wants a mix of private connectivity with MPLS/VPLS/ELAN. A single MPLS/VPLS provider is not able to reach all sites for private connectivity, so the organization uses multiple vendors today. The goal is to replace MPLS with dual Internet broadband-based connectivity, with 4G as a tertiary option.

The HQ and data center will have multiple, fiber-based DIA for low latency and premium SLA. Remote facilities will be DOCSIS/Cable broadband with DSL where available, fiber DIA when no broadband is available, or 4G Broadband (utilizing "all you can eat" LTE plan where DSL is unavailable) as a secondary.

Due to operational and regulatory compliance requirements, the organization backhauls all traffic to the data center and DR data center in HQ for inspection with a NGFW.



Selected Solution:

Cisco Viptela from VAR

Rationale:

Hearth and Home chose Viptela because voice is hosted in the data center and cloud apps don't really require a cloud gateway optimization. The IT team will engage a VAR for deployment assistance, and then take on management afterwards.

There are many Cisco-based integrations in the network including Voice, Firepower, and Identity Services Engine (ISE), so long term there's a desire to integrate with SD-Access.

Large Business - Big 'N Cheap

Big 'N Cheap is a global retailer with 4,000 worldwide retail locations, two HQ sites, 4 data centers and 12 distribution centers. The company is the result of a merger between two legacy retailers.

The organizational structure is extremely complex and political. The IT team must make a clear, concise business case and get buy-in from many different business constituents.

Primary Applications:

- Internally hosted Oracle point of sale systems redundantly hosted in multiple data centers
- Many enterprise point solutions hosted in data centers, on AWS, and in Azure
- Microsoft Office365 SaaS Groupware
- Cisco Unified Communications Manager-based IP phone system hosted in the data centers

IT Staffing:

• 300 IT Staff, with 5 network engineers responsible for WAN (2 senior, 3 junior)

Connectivity Profile:

Dual MPLS at key sites, broadband w/4G backup at stores

- HQs in major metro with many connectivity options Data centers on-net with many carriers
- Stores typically in retail-dense environments (shopping malls, plazas) with many connectivity options. That said, it can be difficult to cross connect connections within the mall. IT relys on 4G for rapid deployments, moves, and so on.
- The organization wants to reduce connectivity costs at key sites by switching one of the MPLS links to DIA and/or broadband

Security Profile:

HQ and distribution sites all backhaul to data centers for firewall, IDS, anti-malware. Remote locations use a mix of premises firewalls or VPN gateways in data centers.

Financial Profile:

Prefers CapEx procurements



The Operational Environment:

Key applications for stores are hosted inside multiple redundant data centers. Line of business applications are hosted in many different places; many have moved to SaaS apps. Each store uses a cloud-hosted voice solution.

Staff will manage the SD-WAN solution internally. Circuits are managed by a telecommunications broker, but the team handles monitoring and opening of trouble tickets via ITSM API connection into the telecommunications broker systems.

Key offices, distribution centers, and data centers connect via MPLS and will stay that way. This project will only connect retail stores. Stores connect via broadband using a managed IPSEC service, but quality and performance issues have plagued the stores for years, as has inconsistent support from the MSP.

The organization hopes SD-WAN will improve network performance and visibility. Bringing management in-house should improve the support experience.

Main locations and the data center will continue to use MPLS and DIA. Remote sites will use DOCSIS broadband as the primary circuit. DSL or 4G Broadband (utilizing "all you can eat" LTE plan where DSL is unavailable) will be used as the secondary.

The company will use a secure Internet/web gateway/cloud access security broker (CASB) solution to access the Internet at stores. Key sites still on MPLS and DIA will use a strategically distributed NGFW/ UTM solution.

Selected Solution:

VeloCloud, self deployed and managed

Rationale:

Because this deployment is just for the stores, it simplifies requirements, which makes it easier to build the business case inside a highly political environment. All of the stores are still on POTS lines today, so switching to a cloud-hosted VoIP solution will greatly reduce rising costs of voice lines.

However, it also means the SD-WAN solution must be able to prioritize voice traffic and optimize connections to the hosted service. The IT team sought scalability, application visibility, and control to prioritize steering capabilities.

Due to inconsistent broadband options at retail sites, the team also wanted a solution with WAN remediation technology to overcome access performance problems.



About The Author

Jason Gintert I CTO and co-founder, WAN Dynamics

Having managed IP/MPLS networks and service provider products for nearly 20 years, Jason cofounded WAN Dynamics based on the belief that SD-WAN will be the way we build wide area networks from now on. Working with networking technologies is not only his profession, but something of a hobby as well.

Jason's education consists of hacking on Linux since '97 and surviving the late '90s/early '00s ISP boom to tell the tale. He now lives in the woods outside of Cleveland Ohio with his wife, two girls, two dogs, and a rabbit.