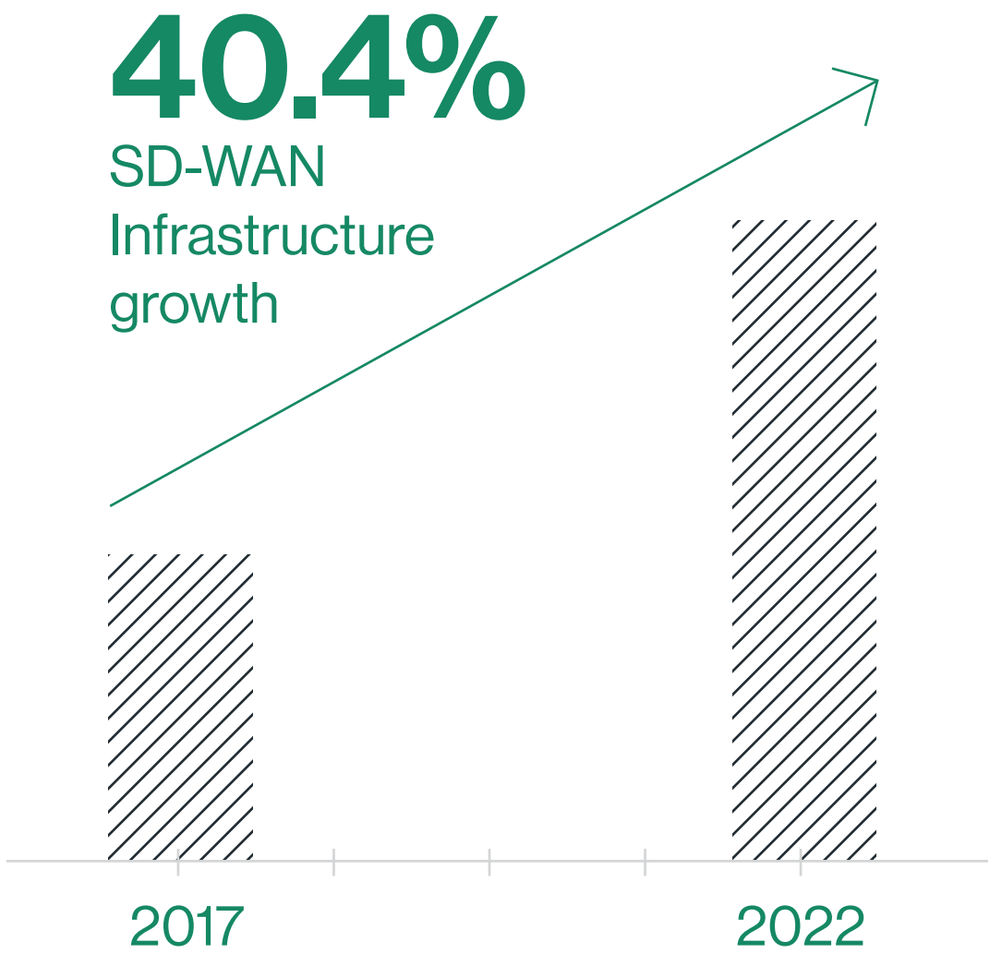
The Ultimate List of SD-WAN Benefits

The **IDC research report** SD-WAN Infrastructure Forecast projects a worldwide 40.4% compound annual growth rate from 2017 to 2022 for SD-WAN technologies and solutions. Some of this growth can be attributed to the fact that many enterprises have progressed beyond experimentation with one or two sites and now are moving to software-define their entire WAN.

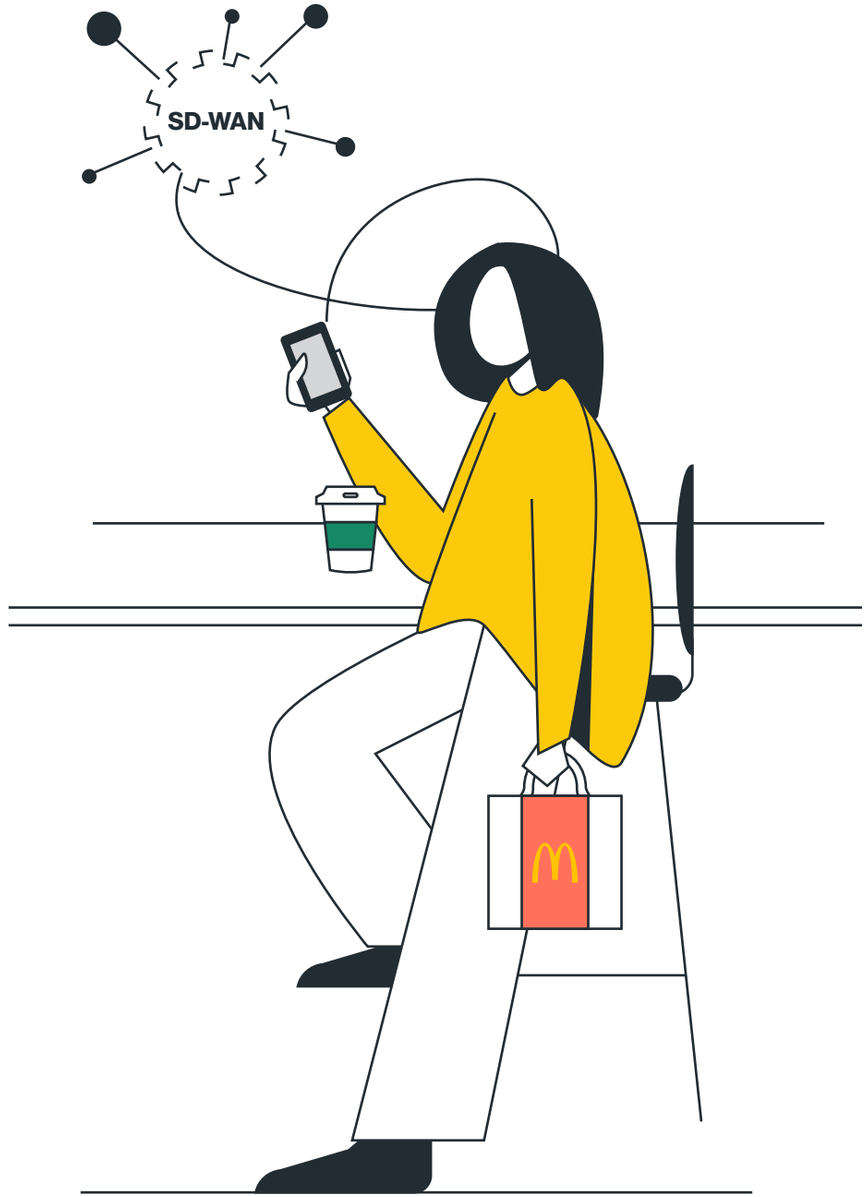
"SD-WAN is the most significant infrastructure transformation since the introduction of virtualization. It transforms how we think about office-to-office communications, Internet access, the cloud, our security architecture, and mobility. When else have we seen a technology with such profound impact?"

Shlomo Kramer
Co-founder and CEO of Cato Networks, a provider of cloud-based and secure global SD-WAN



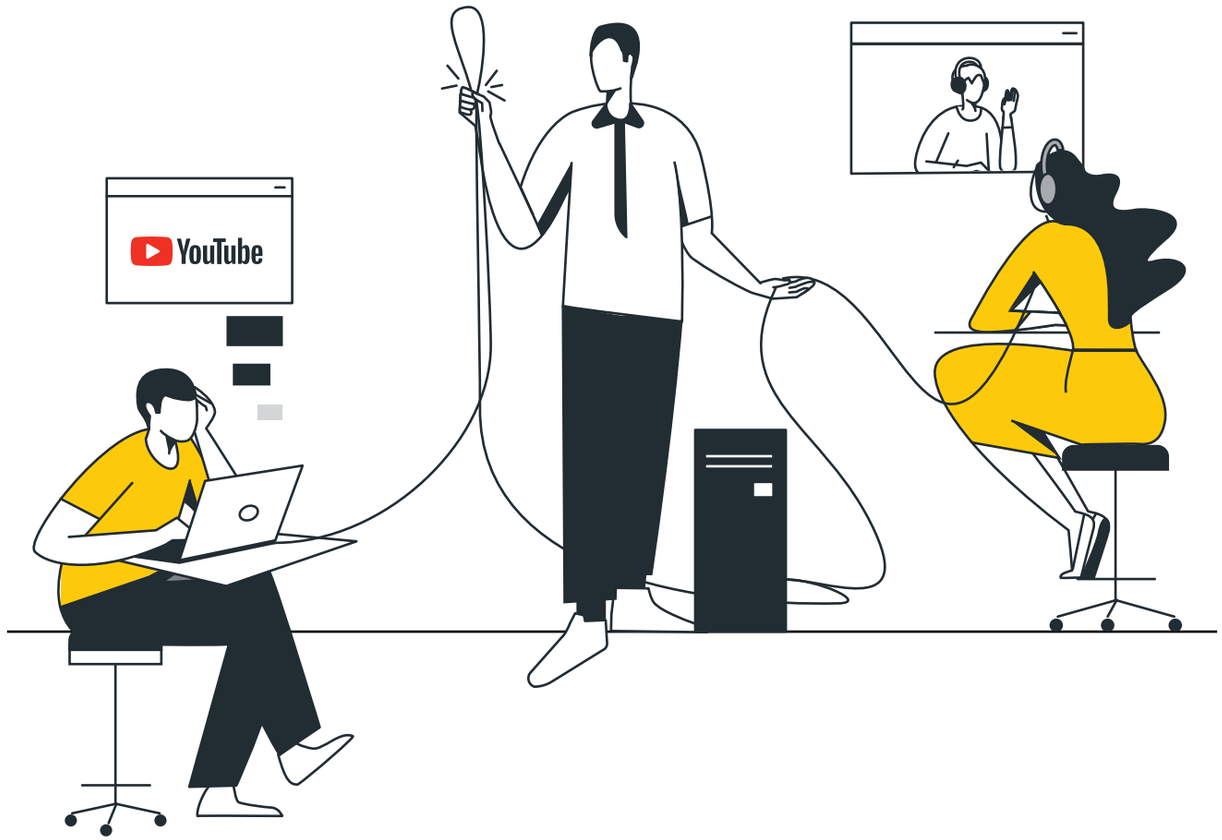
Brandon Butler, Senior Editor with Network World magazine, **declared** 2018 to be the year that SD-WAN went "**mainstream**." In 2019 and beyond, organizations around the world are embracing the benefits — from better business alignment for digital transformations, to reductions in WAN Opex and Capex, and everything in between.

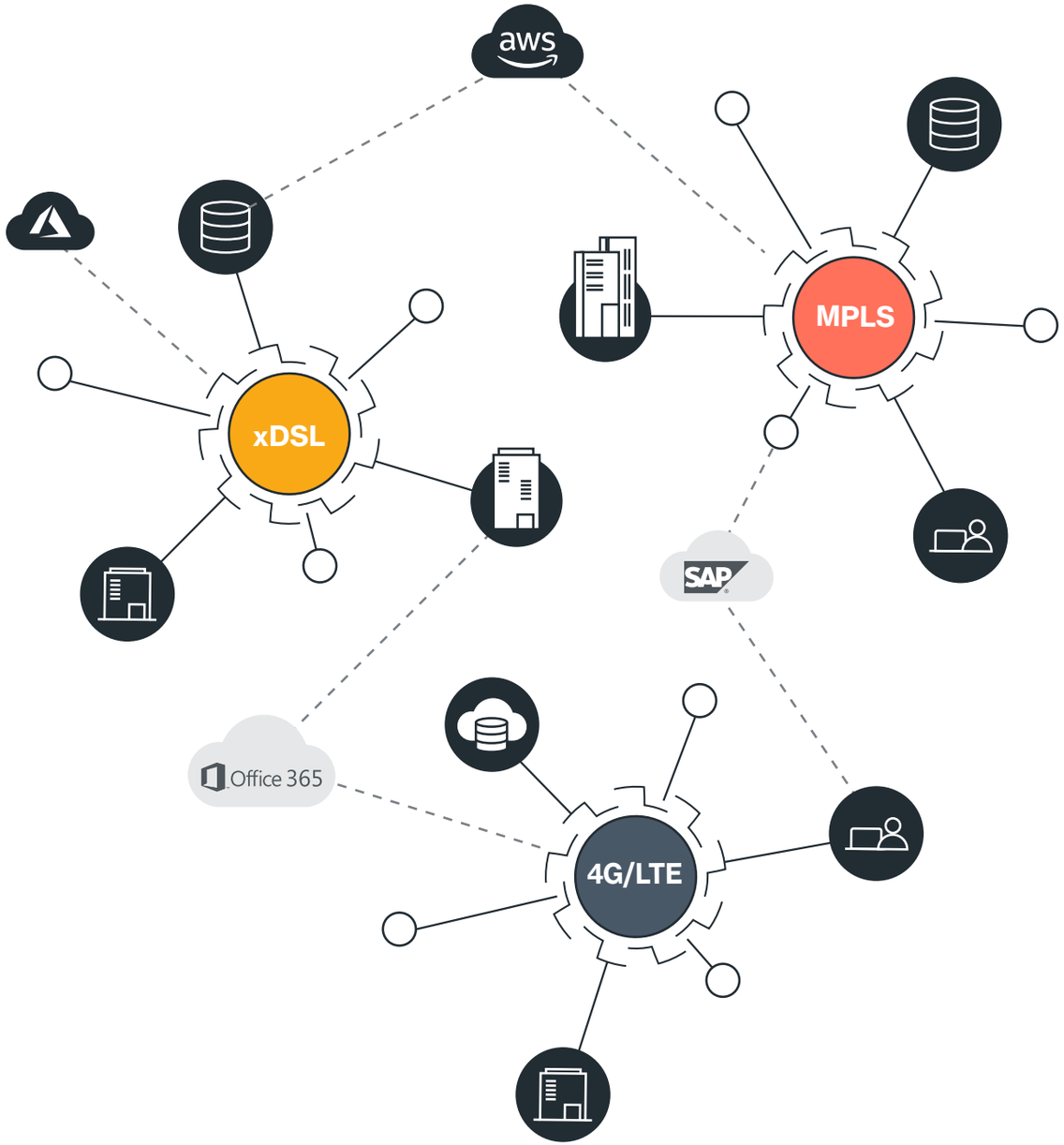
Here's a look at our "ultimate" list of SD-WAN benefits.



1 Better Alignment Between Your Business and Your WAN

All WAN traffic is not created equal. Your important business applications must take priority over, say, entertaining YouTube videos and live streams of sporting events that workers sneak between meetings. While World Cup matches chew up the WAN bandwidth, VoIP phone calls with customers are garbled, and file transfer rates slow to a crawl. Legacy WANs have some capabilities for allocating bandwidth to applications that are most important to the business, but SD-WAN goes further by allowing you to align the uptime and performance characteristics of available data services to the importance of a work site.





Better Alignment Between Your Business and Your WAN

Because SD-WAN enables the use of multiple types of connections – MPLS, xDSL, 4G/LTE/5G, cable modem, fiber, etc. – companies can deploy the kind of connection(s) that make sense for a given location. Business-critical locations such as a data center can be connected by active/active, dual-homed fiber connections that are managed and monitored 24x7. Less critical locations can be connected with a single xDSL line for significant cost savings. Something like a pop-up kiosk at a shopping mall can be connected using 4G/LTE and mobile clients.

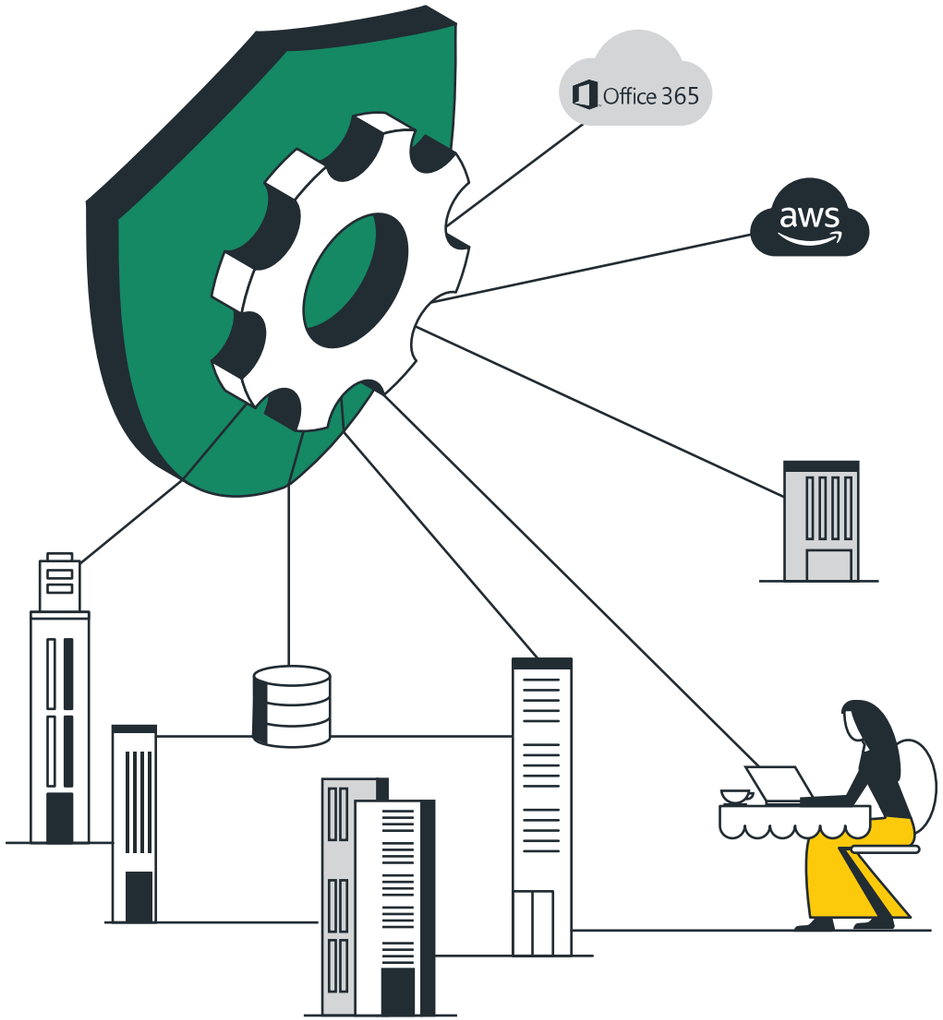
Regardless of the type of connectivity utilized, the SD-WAN manages all locations with a common set of routing and security policies. This provides the benefit of aligning the WAN's usage and availability characteristics to real business needs, which in turn helps to get the best ROI from the SD-WAN.

2 Build a WAN Without MPLS

For decades, wide area networks were built solely on the backbones of MPLS circuits. While MPLS provides SLA-backed reliability and high availability, it's also relatively expensive and inflexible. It can take months to wait for a single circuit to be installed at a branch location, or for a carrier to respond to a change request. That kind of bureaucratic delay might have been acceptable a decade ago, but it's simply too restrictive for today's business environment. The dream for many companies, then, is to be MPLS-free.

SD-WAN does allow companies to use the Internet to replace MPLS, but this isn't appropriate for all applications. Loss-sensitive applications, for example, will underperform over time when traversing the open Internet. These applications still need some sort of SLA-backed backbone, such as that provided by SD-WAN as a Service. With a private, affordable backbone, SD-WAN as a Service can replace a global MPLS deployment and still provide significant cost savings and networking flexibility.

For more information on this topic, we encourage you to read **MPLS, SD-WAN and the Promise of SD-WAN as a Service**.



3 Create a Holistic WAN Security Posture

Security is top of mind for every enterprise today. The traditional approach to implementing security has been to use discrete products deployed in technology siloes. Network teams maintained their firewalls. Branch offices deployed VPNs. Cloud applications prompted the use of cloud-based tools like a CASB (cloud access security broker).

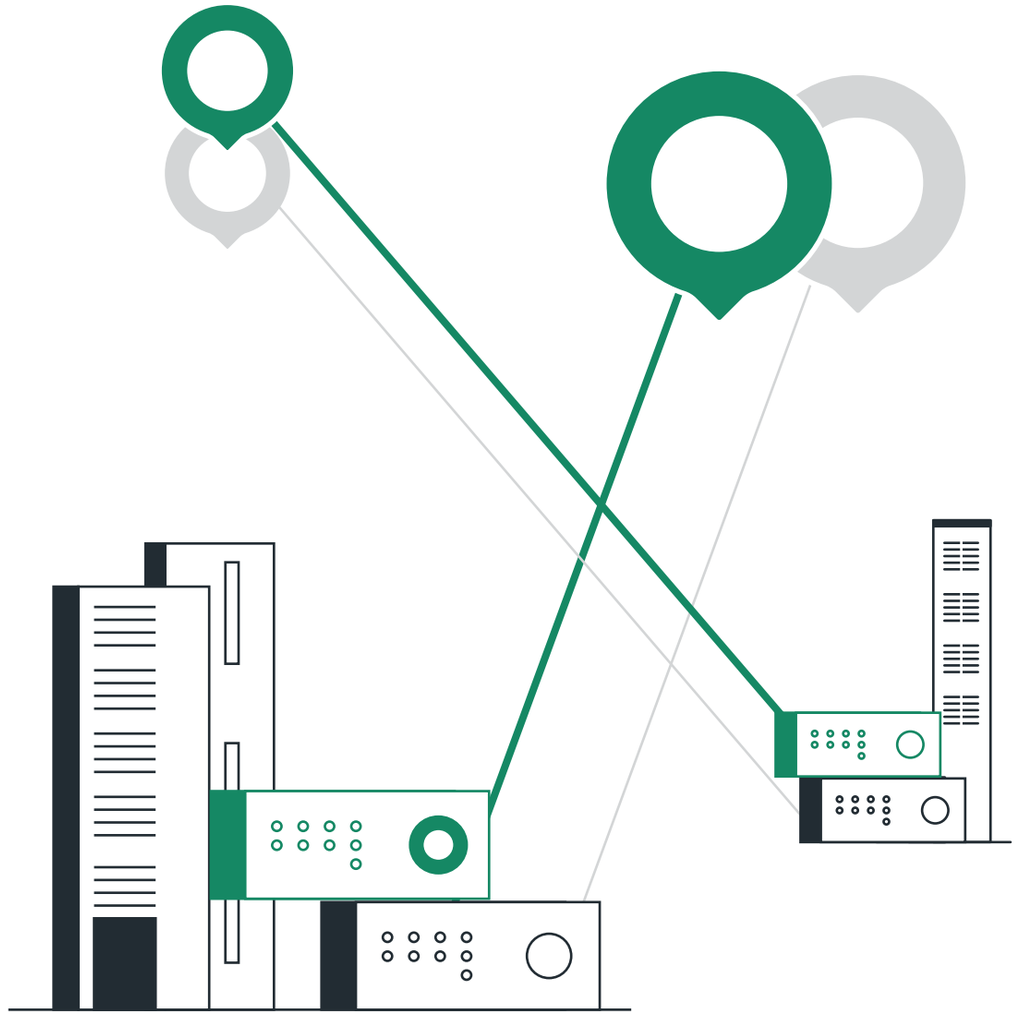
With the right SD-WAN, security can be deployed in a holistic manner to protect all resources on the network. Data center and branch locations, mobile users and cloud resources can connect into one network, the SD-WAN, which is protected by one holistic security policy and one set of security tools. This greatly simplifies how security is imposed and managed, and at the same time it is more complete and thus much more effective.

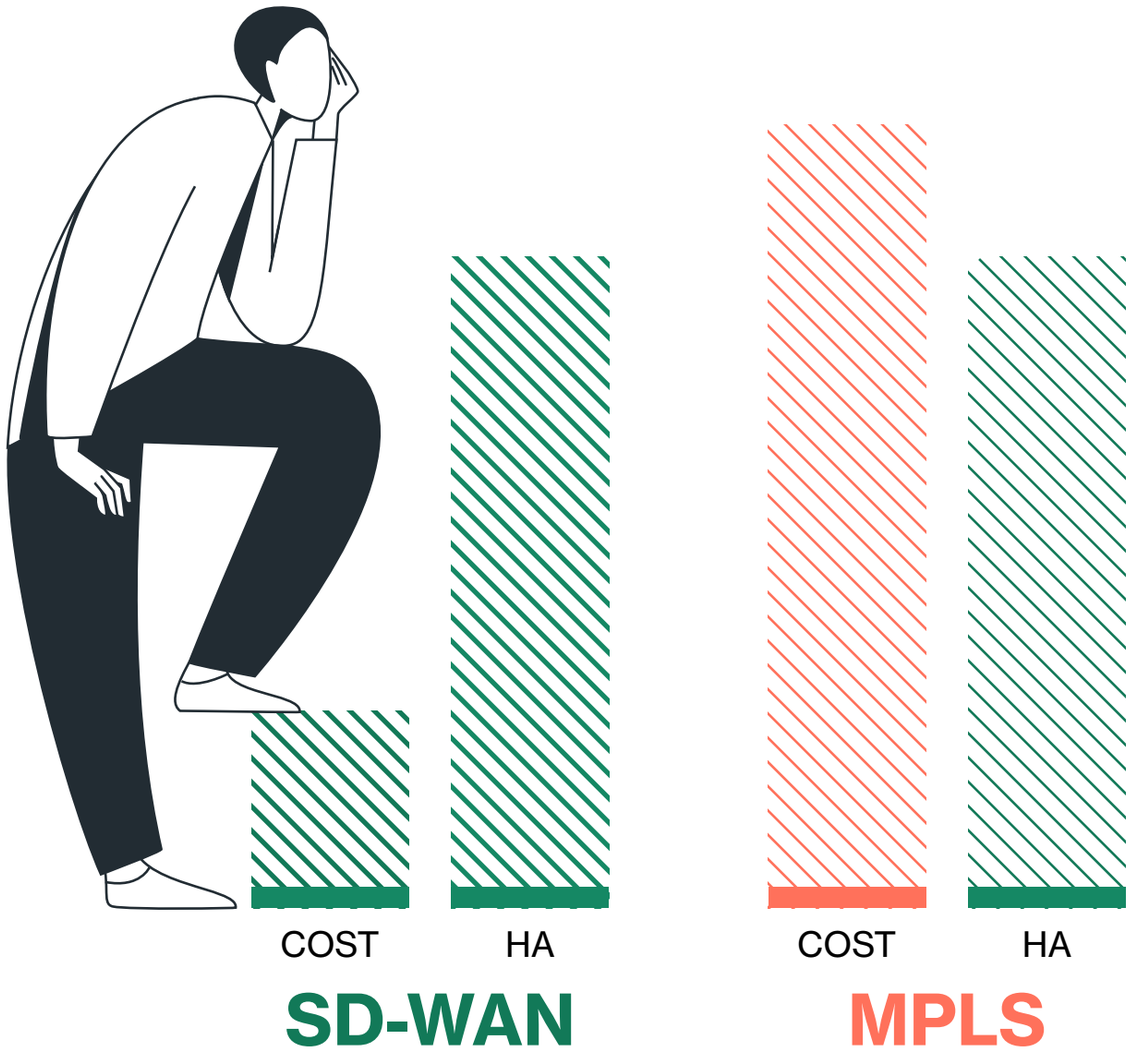
Learn about Cato's holistic approach to security.

4 Get High Availability Beyond the Data Center

High availability (HA) was once thought of as strictly a data center feature. HA refers to systems that are durable and likely to operate continuously without failure for a long time. MPLS has been the traditional means of delivering high uptime, especially when redundant circuits are installed, but SD-WAN has made it possible to instill HA at branch locations at a reasonable cost.

There are several considerations for building high availability with an SD-WAN configuration. First, there must be redundant SD-WAN appliances (i.e., edge devices) at the branch so that if one fails, the other immediately takes over the load, and operations can continue without interruption. Next, those SD-WAN appliances can connect to redundant access lines such that, if one line fails, traffic can failover to another.





Get High Availability Beyond the Data Center

Thinking about redundancy in the Internet access layer, there can be redundant connections on just one of the SD-WAN devices or on both devices. It's all a function of just how much redundancy the organization wants to build into the system. By adding circuits in a load balanced configuration with redundant components for high availability, uptime is increased with each additional circuit. Availability can be further assured by building diverse routing into the network configuration. An organization can use SD-WAN and build these aspects of redundancy to match or even exceed the uptime and availability of MPLS circuits at a lower cost.

Learn more about this approach.

5 Prevent Data Breaches that Exploit Lateral Movement

Many networks today put up perimeter defenses but allow users to move within the network freely. People – whether legitimate users or someone using stolen credentials – can then access resources they aren't authorized to use. SD-WAN segments the network with Layer 3 tunnels (called "segments" or "overlays") that prevent users from seeing and accessing unauthorized resources in other overlays.

Malware is also known to move laterally through the network to spread its havoc. To stop the lateral movement of malware, the SD-WAN must be inherently secure, inspecting every packet between locations through the use of next-generation firewall, intrusion prevention systems, and advanced threat protection within the SD-WAN overlay. Some, though not all, SD-WANs can deliver this advanced level of security, which many security experts consider a critical measure to prevent data breaches.

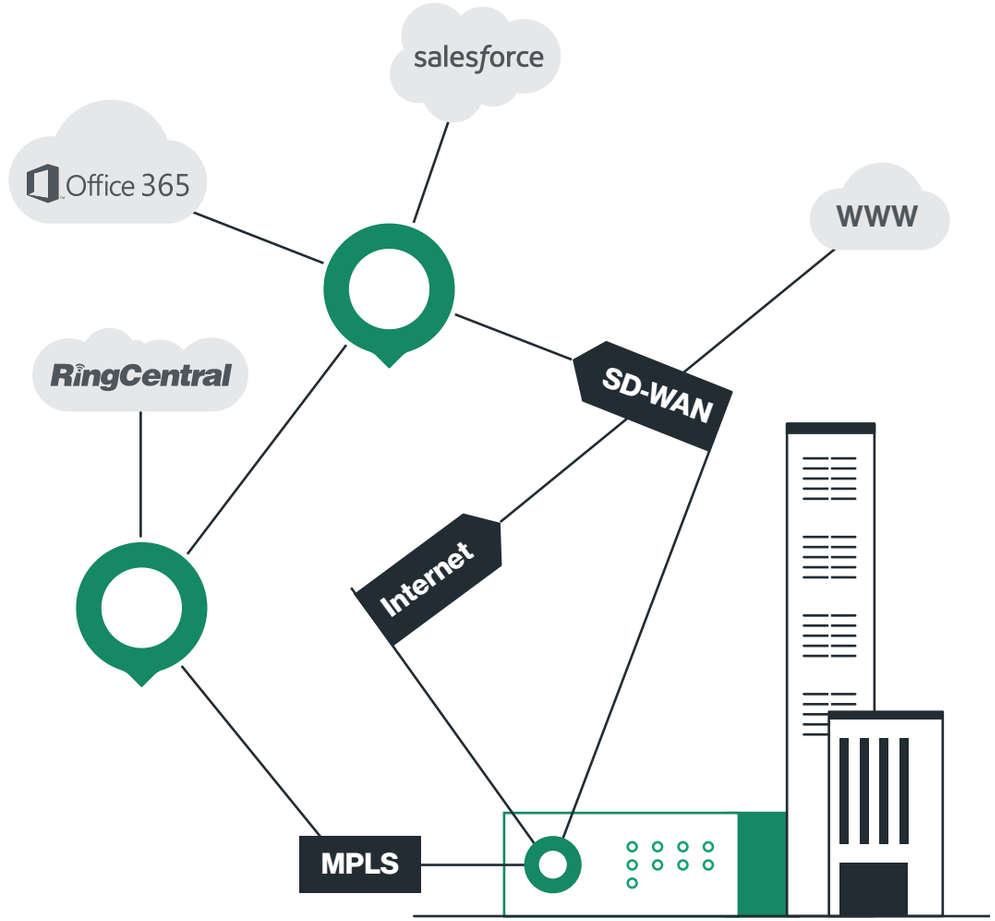
6 Get Better Application Performance

Different types of applications have different network requirements, and how those requirements are met have an impact on application performance. Some, like voice and video, are sensitive to jitter and packet loss, while others, like bulk data transfer, need throughput. Where an application resides, and how traffic traverses the network to reach that application, can have an impact on performance as well. For example, cloud application performance can be denigrated when network traffic has to be backhauled through a central data center before going out to the cloud.

Get Better Application Performance

Using the public Internet as a routing mechanism does nothing to recognize each type of application's needs. Everything is treated the same, so some applications perform well while others clearly don't.

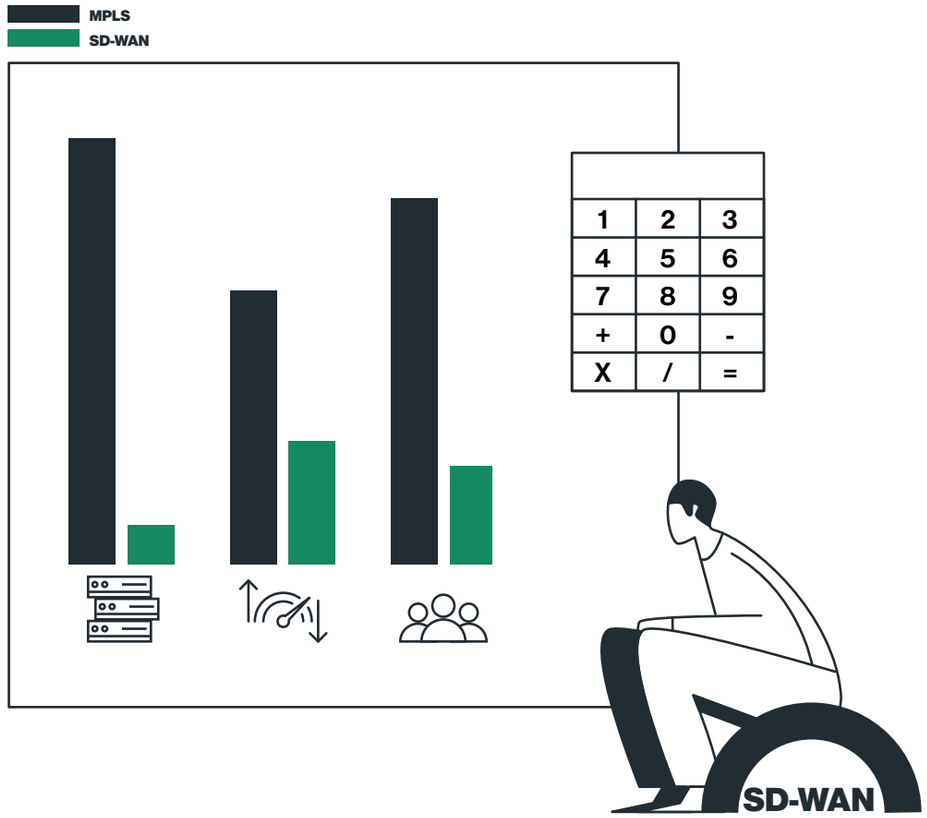
SD-WAN brings intelligence to application routing. SD-WAN appliances continuously monitor the latency and loss metrics of the paths among the other appliances. Then they select the optimal path for an application based on the current line conditions, the application requirements and specified business priorities. This ensures peak application performance across all types of transports.

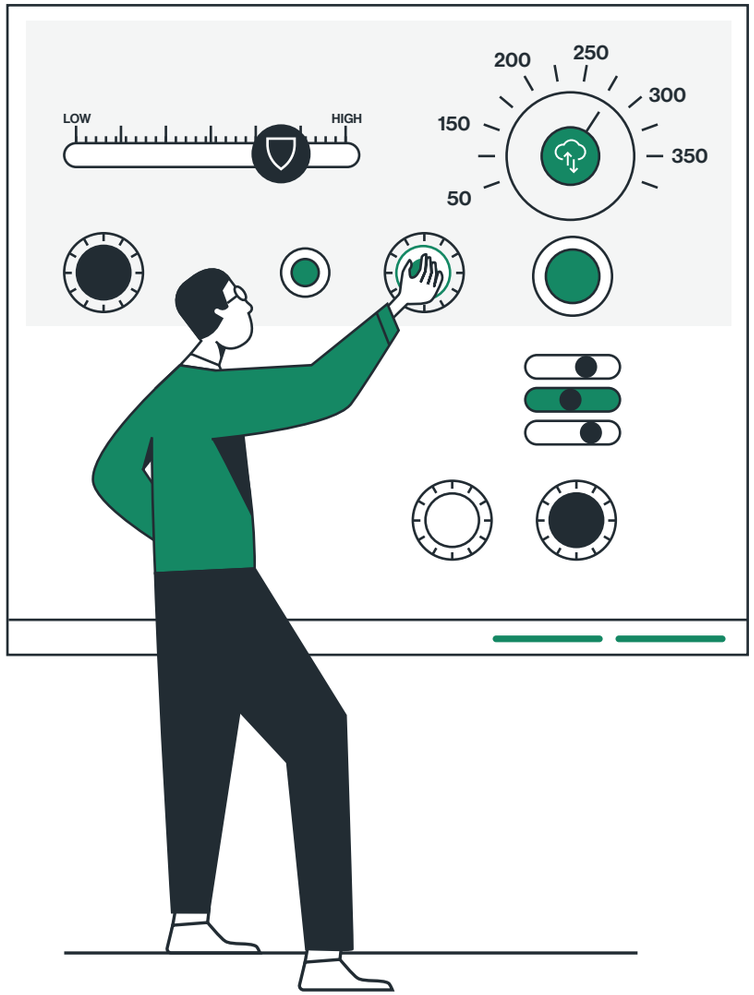


7 Reduce WAN Opex and Capex

For decades, WAN costs have been fixed and expensive, due largely to the high cost of private MPLS circuits. SD-WAN provides the opportunity to reduce or eliminate these expensive lines, replacing them in many cases with much more cost effective broadband and cellular lines. The ROI of an SD-WAN can be dramatic and immediate. Companies can save up to 70% on bandwidth costs alone when replacing MPLS bandwidth with Internet bandwidth.

The reduction of security hardware can be another source of savings. When security is centralized on the SD-WAN, individual physical firewalls in the branches can be eliminated. Additional cost savings can come from the reduction in engineering and technical support time. SD-WANv are generally “zero touch,” meaning that technical expertise is not necessary to deploy or configure them. A new location can be brought up in minutes without a truck roll or an on-site visit from a network engineer. All these factors can add up to significant reductions in capital and operating expenses.





8 Run the WAN Without Engineering

SD-WAN can reduce the dependence on advanced network engineering expertise, which is generally expensive and can be hard to hire. WAN experts have traditionally needed to learn very technical command line interfaces (CLIs) and arcane protocols such as border gateway protocol (BGP) and policy-based routing (PBR) protocol. Bringing up new locations often meant sending engineers to the field to install and configure equipment.

While SD-WAN doesn't completely eliminate the need for networking expertise, the demands are lessened as the management and operation of SD-WAN are greatly simplified compared to traditional WAN configurations. For example, policies are centrally managed and easily pushed out to branch locations. Edge devices are "zero touch" and can be installed and configured with practically no technical support required. And when SD-WAN is delivered as a fully managed service, the engineering burden on the enterprise is greatly reduced.

Proven Technology

The analyst firm Gartner, in August 2018, put SD-WAN on the “Slope of Enlightenment” in its **Technology Hype Cycle for Midsize Enterprises**, stating that the technology will reach the “Plateau of Productivity” in less than two years. Calling SD-WAN “an increasingly popular technology,” Gartner says that more than 6,000 of its clients already are deploying SD-WAN products in product networks.

The company writes: “Software-defined networking in a wide-area network (SD-WAN) enables enterprises to create simpler and more cost-effective branch office WANs that map to modern application and cloud architecture. New SD-WAN solutions have introduced viable lightweight alternatives to traditional branch office routers and are better suited to the predominantly WAN traffic patterns found in today’s business environment. SD-WANs enable MSEs to shift an increasing amount of WAN traffic to internet circuits, allowing them to optimize the costs of MPLS services and create a much simpler operational environment, thus reducing time spent managing the WAN by 50% or more."

There you have it—the ultimate list of SD-WAN benefits that companies the world over have discovered. To get a perspective on how real companies are benefiting today, please browse our **Customer Success Stories**.

US Signal SASE Cloud – Powered by CATO

US Signal, a leading provider of network connectivity and data center services, partners with Cato Networks, the provider of the world's leading SASE platform, to offer the SASE Cloud throughout North America.

The SASE Cloud connects data centers, branches, mobile users and cloud resources into a global, optimized and secure managed SD-WAN service. All WAN and Internet traffic is protected by a comprehensive suite of security services, updated and managed by dedicated security experts.

Replacing MPLS and multiple networking and security point solutions with the SASE Cloud forms an agile, efficient network that can meet today's and tomorrow's business requirements.

For more details, please contact us.

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Cato Cloud

Global Private Backbone

Edge SD-WAN

Security as a Service

Cloud Datacenter Integration

Cloud Application Acceleration

Mobile Access Optimization

Managed Services

Managed Threat Detection and Response (MDR)

Intelligent Last-Mile Management

Hands-Free Management