SD-WAN & SASE

Modern Networking Solutions

In 2020, digital transformation accelerated as businesses adopted new technologies to enable global remote workforces.Today, more than 90 percent of organizations use cloud solutions, according to IDG's 2020 Cloud Computing Study. [1] Statista reports that 73 percent of organizations use three or more data center locations. [2] Worldwide spending on edge computing is predicted to reach $250 billion by 2024. [3]

In 2020, many people started working remotely, and a large portion may not return to traditional offices. An outstanding 96 percent of workers say they want to remain remote either full time (65 percent) or part time (31 percent), according to Flexjobs. [4]

New networking solutions are needed to keep up with these changes and provide consistent access, latency and security. SD-WAN (software defined wide area network) has emerged as today's leading solution, but Secure Access Service Edge (SASE, pronounced "sassy") is a promising newcomer on the horizon.

What is SD-WAN

SD-WAN is a virtual network overlay not directly tied to any specific hardware or infrastructure. This makes it well suited to the "as a service" and cloud-based IT footprints of today's organizations.

Previous WAN solutions created a secure, dedicated connection from branch locations to a specific server. These solutions weren't able to scale well to keep up with workforce changes, resulting in poor performance and questionable security.

SD-WAN uses virtualized architecture, separating the control plane from the data plane. This allows organizations to control the network (including access, connectivity and security) via software from a centralized location. It's a solution designed to push fast, reliable, secure networks to users anywhere.

Benefits of SD-WAN

SD-WAN has emerged as the poster child for modern networking because of its agility, flexibility and fit for how today's companies and employees work. Many of the benefits center around improved accessibility, better management and increased connectivity, along with a significant financial benefit.

Easy to Manage

SD-WAN offers a centralized, cloud-based control plane, allowing IT teams to easily manage the network from anywhere and quickly make changes as needed. SD-WAN solutions often offer simple interfaces that make it fast and easy to provision connections to branches anywhere (without being on location).

Improved Bandwidth (at a Lower Cost)

The control offered by SD-WAN also allows organizations to improve bandwidth by provisioning network traffic for optimal speed, throttling lower priority applications and traffic and load sharing across WAN connections via dynamic path selection.

This improved control over bandwidth often results in cost savings for organizations utilizing SD-WAN. In fact,.58 percent of respondents in a State of the Network 2020 study stated that their primary motivation for employing SD-WAN was cost.[5]

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Viavi Solutions, State of the Network 2020

Connection Flexibility

As the way employees work and where they work changes, more network connectivity options have emerged. A "rip and replace" approach isn't sensible or feasible for many organizations, but with SD-WAN, many existing connections can be used within the new solution. SD-WAN is compatible with MPLS, internet connections, LTE and other connectivity solutions.

Supports Third Party Services

Another component of how the working world has changed is organizations' increasing use of remote workforces, third party vendors, contractors, "as a Service" solutions and other outside elements. Allowing access to your network when transmitting sensitive data has caused worry in the past, but SD-WAN makes it easier to set up permission-based security policies to allow access to certain applications and data on the network.

Improved Security

SD-WAN has the same end-to-end application traffic isolation benefits as previous WAN solutions, but it takes security a step further — particularly when it comes to internet connections. According to IDG, "SD-WAN can also protect application traffic from threats within the enterprise and from outside by leveraging a full stack of security solutions included in SD-WAN such as next-gen Firewalls, IPS, URL filtering, malware protection, and cloud security."[6]

What is SASE?

Even newer networking and security models like Secure Access Service Edge (SASE) allow organizations to apply secure access wherever users, applications or devices are located. SASE is a cloud-delivered networking solution hyper-focused on security for dispersed teams. This emerging technology combines existing solutions such as VPN, SD-WAN, Zero Trust and several other security functions into a single solution.

SASE relies on policies and permissions (set by a central manager) that are pushed to all users regardless of their location, end device or network. It promises to be a dynamic solution that provides low latency and high-level security.

SASE is still a new solution but it's poised to grow quickly. By 2024, at least 40 percent of enterprise organizations will have a SASE adoption strategy, according to Gartner.[7]

Benefits of SASE

SASE's primary benefits are simplification and better security intentionally designed for a dispersed workforce — something that will be increasingly important in coming years. SASE has many of the same benefits as SD-WAN, but in an enhanced capacity.

Streamlined Security & Cost

Because SASE essentially combines several existing network security functions (e.g. VPN, Zero Trust), it functions as a more centralized solution for modern network security needs. These security features will be provided by a single vendor, which reduces complexity and potentially reduces IT spend.

Increased Secure Access

The trend of working with contractors, agencies, consultants and other third party providers isn't likely to wane. As with SD-WAN, SASE makes it easier and more secure to give these outside entities access to your network and data, regardless of their location and end-user device. SASE takes a permissions- and policies-based approach, making it extremely simple to limit access based on role and need.

Increased Reach

SASE is still an emerging solution, but analysts predict it will have a large global footprint that includes many points of presence. This will benefit organizations as employees and other workers continue to be dispersed. The ability to provide employees with secure, reliable network access regardless of their location will also give companies the option to increase their hiring pool.

As SASE continues to evolve and more vendors enter the market, we'll likely see additional benefits emerge. Companies that want to be on the forefront of security and supporting remote access should begin the discussions around SASE now.

SD-WAN & SASE Best Practices

As with any technology solution, understanding what you need and expect from the service is key to successful deployment. When exploring SD-WAN and SASE specifically, it's also important to ensure any solution you choose will work with your desired connectivity methods. Working with

an experienced IT advisor can help you define your criteria and identify the best solution and provider. As these solutions continue to evolve, smart companies will monitor the features available to take advantage of full solutions and reduce redundancy where possible.

It's important to remember that SASE and SDWAN solutions centralize network security — not necessarily outsource the tasks completely. With this in mind, it's best to have an in-house point person or team to oversee solution implementation and management. This person or team is an integral part of vendor selection, as they likely best understand your existing technology, challenges and needs.

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[6] IDC, "SD-WAN: Security, Application Experience and Operational Simplicity Drive Market Growth," April 2019. https://www.cisco.com/c/dam/en/us/solutions/collateral/enterprise-networks/intelligent-wan/idc-tangible-benefits.pdf

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