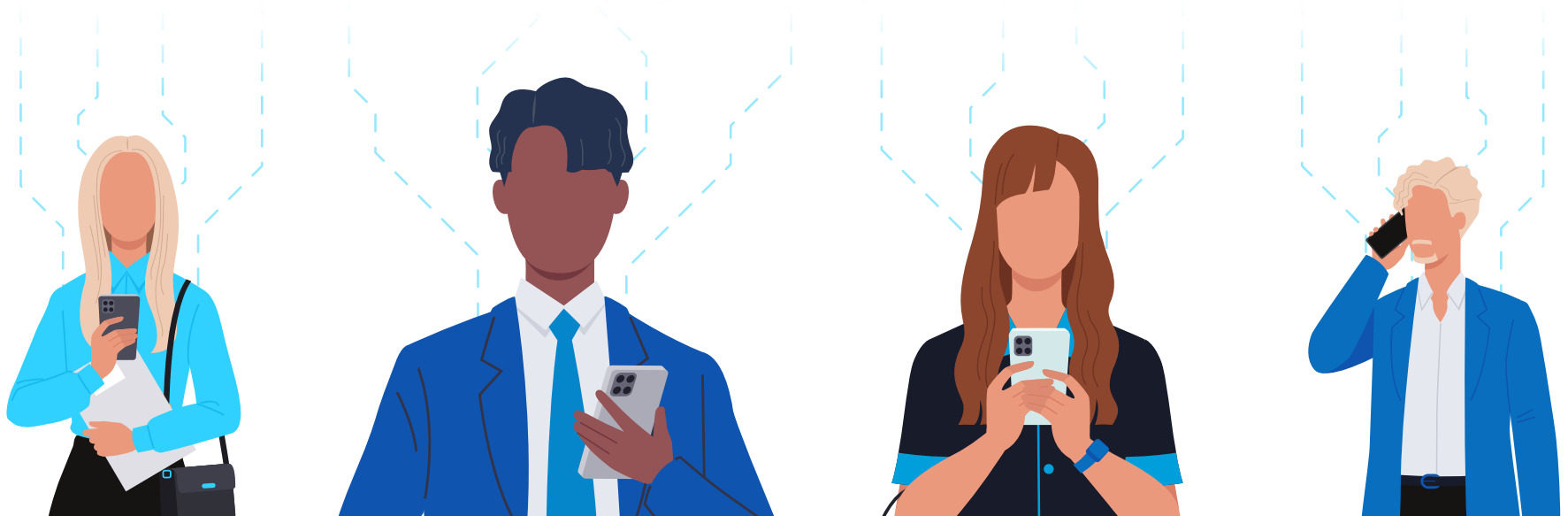


AT&T SD-WAN with VMware

Success in the simply complex world of SD-WAN



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Changing your networking game with a trusted Managed Service Provider (MSP)



There's a lot you can say about SD-WAN: it's game changing, transformative, inevitable, and a cornerstone for digital transformation.

But it is still networking.

SD-WAN can absolutely make life easier for your users and customers. But SD-WAN solutions, like all networking solutions, require design and engineering expertise. And after deployment, the network needs monitoring and management.

Which is why, according to Frost & Sullivan's 2021 US Business Embrace SD-WAN Technology to Drive Their Digital Strategy, 64% of IT decision makers prefer a fully managed SD-WAN service where the provider managed the solution end-to-end, with another 11% of respondents preferring a co-managed solution. Both models allow customers to have visibility into network performance characteristics.

Where do you start? →



Your kind of managed service

We know that transforming your network can be a daunting task, but a good **Managed Service Provider (MSP)**, one that you can trust, can assist you with planning. Some MSPs also provide network consulting and planning services.

With SD-WAN, day-to-day monitoring and management is as important today as it has been with traditional WANs. To be of value to the organization, managed SD-WAN services must offer more, with the “more” tailored to each organization’s needs.

Why?

Because SD-WAN is multi-faceted and dynamic. Furthermore, SD-WAN solutions are only efficient if integrated well with the underlying network infrastructure, and WAN management is a complex process.



What is important to your SD-WAN managed service?

- Global/local account team
- Project design and management
- Site typing
- Policy and template development
- SD-WAN engineering specialists
- Integration/migration plans
- Proof-of-concept support
- Experienced global deployment/site turnup
- End-to-end management
- Analytics and reporting
- Managed security

Where do you start?

Analysts look at sweeping trends that drive organizations to SD-WAN. Vendors focus on SD-WAN product features. For AT&T, SD-WAN is about business outcomes. Trends may be drivers and features may be attractions, but business outcomes drive everything. Defining your business outcomes is the best place to start.

What business outcomes are you expecting with SD-WAN?

Enterprises are looking for the most efficient and cost-effective way to support their employees with the appropriate security for every device, user, and location, all with complete visibility. The network needs a secure connection, utilizing a lower cost bandwidth whenever possible to ensure sufficient user experience. Following on from this, organizations would like their business networks to have the ability to isolate and prioritize certain data traffic, ensuring the smooth running of business-critical applications.

To reduce the risk of costly troubleshooting issues, businesses want to have access to SD-WAN expertise that they don't have in-house, as well as 24/7 access to network resources for mobile workers (using any type of device from anywhere).

That's where a **Managed Services Provider (MSP)** comes in...

What SD-WAN can do for you

When SD-WAN first emerged, being cost-effective by utilizing internet connectivity was viewed as one of the top benefits, but as the technology has matured, enterprises are finding greater benefits. SD-WAN also allows them to achieve their business goals related to optimizing their IT resources, improving the productivity of their network and bettering performance with their cloud applications.

Benefits Achieved from SD-WAN Deployment*

57% We are able to optimize IT personnel due to centralized policy administration and network management

54% We have seen improvement in application performance (based on metrics such as availability, response times)

52% We are able to better embrace a cloud-first strategy

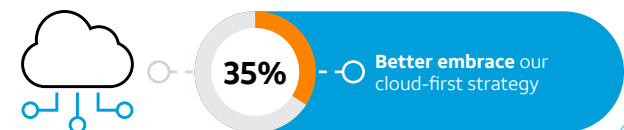
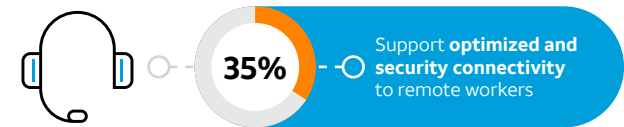
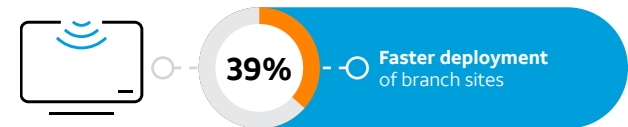
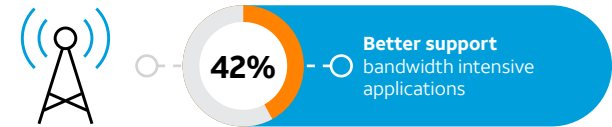
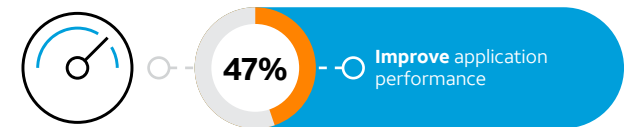
47% We are able to optimize and securely connect remote employees to cloud-based applications

46% We are able to plan security better due to a more granular policy administration

29% We have seen a reduction in WAN expenditure



Benefits Organizations Expect from SD-WAN*



*All data captured from Frost & Sullivan eBook (2021)
 "US BUSINESSES EMBRACE SD-WAN TECHNOLOGY TO DRIVE THEIR DIGITAL STRATEGY"

Business drivers to SD-WAN



The impact of the pandemic has brought digital transformation forward, bringing it top-of-mind for business IT decision makers. Your digital and network transformation goals will be based on your desired business outcomes, and these outcomes are completely unique to your organization. It may be that over time, your goals will change as your business evolves. The reality is that your network and digital requirements will always be changing. SD-WAN is a technology that can work with your existing technology and infrastructure to adapt to the evolving needs of your business, whether that's through enabling automation using AI, integrating Internet of Things (IoT) or deploying Big Data analytics.

How can SD-WAN support your changing business needs?

Work from anywhere

Covid-19 significantly impacted the workplace dynamic, changing the traditional office setting to be more mobile. This allows employees to work from anywhere. These employees need access to enterprise applications and through doing this, consume network resources and create security vulnerabilities. These dynamic network models need certain capabilities to be successful, like rapid provisioning, simplified management, centralized security policies and flexibility in transport options.

Additionally, organizations need unified communications (UCaaS) to promote team cohesion with remote workforces – it's hard to get into a team spirit when your employees are sitting alone with only a cup of coffee for company. However, UCaaS is demanding as it requires a sufficient, guaranteed bandwidth, as well as the ability to isolate and secure traffic by application.

The cloud

Without question, cloud computing is already an integral part of digital transformation. The cloud has many benefits including flexibility, agility and integration, allowing organizations to embrace hybrid working as well as being able to take advantage of resources offered by different cloud and SaaS providers.

The Edge

For some organizations, the Edge is branch offices, remote workers, pop-up stores and temporary field sites. The Edge can also be drones, airplane engine sensors, or even communications from the ocean floor. The Edge is more far-reaching and fluid than it used to be and with SD-WAN, you can use the Edge to its full potential.

SD-WAN experience and expertise →



How does SASE play into your digital transformation?

Many enterprises had already begun modernizing their network using SD-WAN. With the advent of the pandemic accelerating their transformation, security increasingly became a focus point. Enterprises had to connect and protect an expanding remote workforce, no matter the end users' location or device. Secure access service edge (SASE) is gaining momentum to solve challenges as connectivity, networking and security continue to converge to support business requirements today and in the future.

While SASE architecture greatly simplifies security management in cloud and hybrid environments, designing and executing on a SASE framework may require resources that are already stretched thin. IT teams may not be able to fully allocate their time to deploy SASE technologies. This is where an MSP can offer a lot of value. Working with your MSP to build strategy for your upcoming network and security transformation initiatives, and even conducting a proof of concept (POC) to qualify SASE solutions early, can help set up your enterprise up for increased productivity, fewer risks, and simplified management

Keeping your network secure

Security

Digital transformation creates new security challenges, and you need to ensure that you have protection that matches your business model with resilience and adaptability. Security should be integral as part of your network lifecycle management – technology and the threat landscape are constantly changing – and your security is never just set up and complete.



AT&T SD-WAN with VMware: “Who you gonna call?”



As a technology, SD-WAN is growing. Think of the advantages to come. Or, better yet, work with a trusted Managed Service Provider (MSP) like AT&T to help you make the right choices, whatever your business outcomes may be.

A valuable takeaway of the pandemic is that change can come shockingly fast. We've already seen how SD-WAN can support changing environments but another advantage to think about is how it handles complex networking scenarios without creating its own complexities. Both examples depend on knowing how best to work with SD-WAN, which requires a breadth and depth of SD-WAN expertise and experience. Depending on the scope of the network, it also requires resources — a spectrum of modern tools and lots of people, where and when you need them.

Your digital transformation, with all its choices and complexity, will continue to evolve to meet your changing business goals. Keeping this up can take time and manpower, which is why so many companies are choosing to work with an MSP.

Here's why AT&T SD-WAN with VMware is a much better bet for your organization.

[How we work with you →](#)

SD-WAN experience and expertise



Experience:

AT&T has over 140 years of solving important problems for customers.

Expertise (breadth and depth):

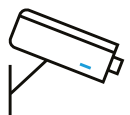
You can certainly find deep SD-WAN expertise working with a product vendor; but that expertise may be a small component of everything that goes into an SD-WAN project. That's why you should look for both breadth and depth in expertise. For example, AT&T has expertise and resources in:



A breadth of products and services for an end-to-end solution



Engineers with deep technical expertise across the full spectrum of SD-WAN technologies



Network transport, voice and data, wireless and other components of an SD-WAN service, including security expertise through the AT&T Cybersecurity team

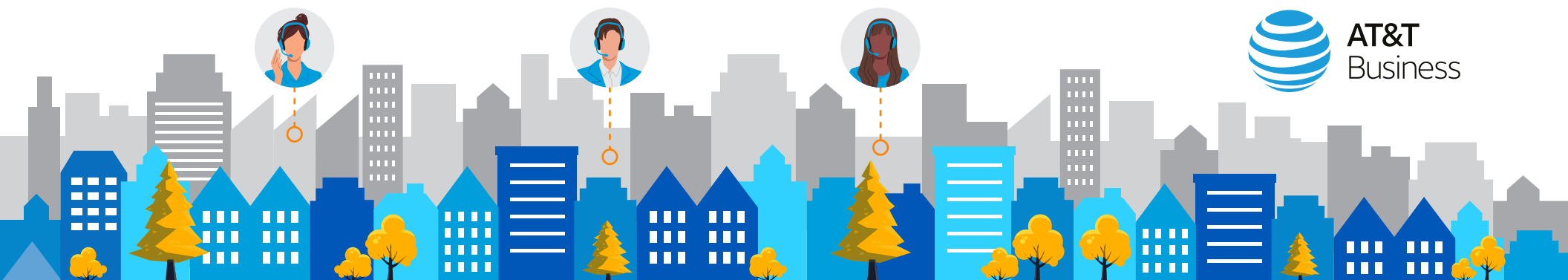
The SD-WAN platform

AT&T forged a strong, synergistic collaboration with VMware in the early stages of the evolution of the SD-WAN marketplace.

AT&T SD-WAN with VMware offers enterprise-grade performance, security, visibility, and control over both public Internet and private networks. SD-WAN is transport-agnostic, so you can utilize virtually any connectivity option, from broadband and LTE to MPLS and dedicated Internet, to create scalable networks.



The offer includes Dynamic Multi-path Optimization™ (DMPO) and deep application recognition to handle traffic from over 3,000 applications across WAN links. It aggregates multiple links and steers traffic over the optimal links to all your locations – branch offices, private data centers, and remote workers. Applications are automatically recognized and steered to the optimal link(s) based on business priority and built-in knowledge of applications' network requirements. Dynamic per-packet steering can move a session, for example a voice call, in mid-stream to avoid link degradation without any call drop or even voice quality glitch. Single, high-bandwidth flows can utilize aggregated bandwidth for faster response times.



| How we work with you

We know that digital and network transformation is not just one simple journey from A to B. Technologies are constantly evolving, as is your business and networking needs. AT&T has a legacy as a trusted MSP, with deep SD-WAN technical expertise and a successful track record of designing digital transformation strategies.

When planning your transformation strategy, it's best to focus on your desired business outcomes first. Working backwards from there, you'll need a route that provides flexibility and agility to change, as well as the security that matches your business model with resilience and adaptability. That's where AT&T as your MSP can assist you.

Next generation networking expert engineers (NGN EEs) with deep technical expertise in SD-WAN technologies collaborate with you and VMware to analyze your applications, security requirements, and traffic patterns. This analysis is used to design a solution that prioritizes your mission critical applications and traffic to deliver optimized performance.

With AT&T SD-WAN with VMware, you have dedicated resources assigned to your network design and implementation.










[See our case studies](#) →

Site Typing

It is important to understand the characteristics of your networking demands as well your priorities to determine the needs of your multi-site solution. Working with an MSP like AT&T, we dig deeper on your networking needs and how they are critical in the characteristics that help determine the best fit. This is often not just one product but a hybrid network solution.

Site typing includes aspects such as type of location (data center, branch, remote), types of applications and their performance demands, cloud access and bandwidth requirements, etc. These are key factors that are taken into consideration for current and projected future networking needs.

The importance of “Site Typing”

 Footprint - U.S, MoW, Remote Workers	 Bandwidth/Speed - Variable, Committed, Best Effort
 VPN - Internet/DIY, MPLS-VPN, Sw Ethernet - Dedicated, Private Line, UVN	 Management - Managed/Self/3rd party; Unmanaged Type - CPE/routers, SD-WAN
 Internet - Distributed, Centralized	 Applications - Business critical voice/video, lower priority email, Wifi
 Cloud - Private, Public, Hybrid Shared Data Centres - Colocation	 Security - Managed/Self/3rd party; Unmanaged
 Reliability & Performance - Diversity, SLAs, CoS	 Digital/Customer Control - MACDs, reporting



Rarely is site typing uniform across sites, which is why the AT&T site typing methodology covers:

- Determining the network topology and access types required.*
- Utilizing application visibility tools to assess all applications and their associated bandwidth needs.
- Identifying QoS prioritizations, including talking to stakeholders to identify business-critical applications.

AT&T SD-WAN with VMware uses preset templates for common applications that can then quickly generate site profiles for your review. Once created, the service uses the same information as the basis for tracking network usage as well as identifying and highlighting any potential anomalies.

*There are benefits to having AT&T provide the access, including: 1) better control and integration of the underlay and overlay, and 2) AT&T works with access providers as part of our daily business and we can handle costs and accountability for performance against service level agreements.

The integrated service experience

The Integrated Service Experience (ISE) provides visibility across multiple service components of your overall managed solutions, offering accountability, incident resolution alongside transparent and consistent communications. The ISE makes your life easier by providing:



Single global point-of-contact and accountability with collaboration across multiple AT&T service lines



Proven operating model ITIL approach with incident and problem management modules



Consistent service experience with prioritization of critical incidents, faster restoration times, stewardship, and transparent communication



Root cause analysis and creation of service improvement plans



Proven expertise and mature workflow for supporting global customers



As the world of networking evolves and becomes more complex, AT&T is a trusted advisor that delivers managed solutions with collaborative consulting, industry expertise and networking simplicity. From wireless to wireline, emerging SD-WAN and security technologies to existing solutions, AT&T specializes in bringing it all together to serve and delight our customers.

| Case studies



The unpredictable and the expected

Do SD-WAN projects tend to unfold in a similar way?

Is there a typical or recommended onramp to an AT&T SD-WAN with VMware engagement?

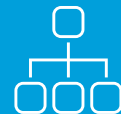
The answer to both questions is no. But it shouldn't come as much of a surprise that no 2 deployments are the same and how SD-WAN projects are initiated. Sometimes they're the tip of the iceberg — a modernization project to support current and future projects. Sometimes it's the consideration that comes after a project is underway.

Over the next few pages, we provide a handful of AT&T engagements that show just how varied projects can be. But what they all share is that AT&T is the preferred relationship for undertaking, executing and managing these SD-WAN projects.

We bring:



A consistent methodology that touches all the layers and interconnection



The expertise and extensive resources needed to design, deploy and manage the end-to-end solution



A single SD-WAN platform to create a dynamic, intelligent, flexible and application-aware modern WAN



| Retail case study



A nationwide retailer with a few brick-and-mortar stores also utilized pop-up shops that enabled each store to participate in local fairs, festivals and other charitable events. The company's IT team had originally developed its own kits based on legacy WAN technology but started to look at modernizing their network with SD-WAN. With their original solution, they began to experience issues with unpredictable connections, causing timeouts that left customers waiting in lines at their pop-ups. Not surprisingly, IT spent a lot of time fielding calls from frustrated on-site staff.

AT&T SD-WAN with VMware presented a more elegant way to connect their mobile locations. AT&T was able to create a mobile Edge application offering a connectivity experience identical to the in-store experience (for both employees and customers). AT&T engineers designed event kits with tablets loaded with the point-of-sale (POS) application, deployed VMware 510 LTE and provided AT&T wireless broadband support, with a wireless modem and a SIM card for a second link. The connectivity is also forward-compatible with 5G. The kits had to be designed and tested in 60 days, in time for the holiday season.



The kits have made the business model scalable, and IT has offloaded the support burden with AT&T managed services lifecycle management for both the stores and pop-up locations.

Any employee can set up the kit in minutes without help desk support. Once plugged in, the technology autosenses and configures the optimum connections for each pop-up location.

| Healthcare case study

Community-based healthcare is extraordinarily important, especially for underserved neighborhoods. To respond to this need, a U.S.-based company created a model for creating a network of community-based 24-hour urgent care facilities. In each state, the company established a partnership with a single hospital. All the urgent care facilities share patient information with the hospital through a SaaS-based electronic medical record (EMR) application.

The enterprise came to AT&T looking for an end-to-end solution.

The IT team initially connected each clinic with an MPLS circuit, but the model wasn't satisfactory, scalable, or sustainable. IT knew that SD-WAN was the right alternative to a traditional WAN model but didn't want to drain internal IT resources trying to become SD-WAN experts. The enterprise came to AT&T looking for an end-to-end solution.

With AT&T SD-WAN with VMware, our engineers created two profiles to simplify and speed up deployments. Policy-based security from Edge-to-cloud (or, in this case, multiple clouds) is implemented into each profile. Each clinic is connected by an Internet and broadband circuit, with automated failover between the circuits for resiliency. AT&T SD-WAN with VMware monitors and supports all the clinics. IT still has its finger on the pulse of the network through a portal that enables them to check the network health of the clinics at any time.

Transport case study



A large transportation customer wanted to transform the network at their airport locations across the US, as well as in a few sites globally. Their current locations had outdated, end-of-life routers running on legacy T1 and TDM connectivity, resulting in bandwidth limitations. There was already a strong relationship between AT&T and the enterprise as they had been an AT&T customer for a long time utilizing multiple products and services.

From this relationship, the customer asked AT&T to help transform their network spanning across

113 small airports,
280 medium-sized airports,
31 large airports,
and 2 data centers.

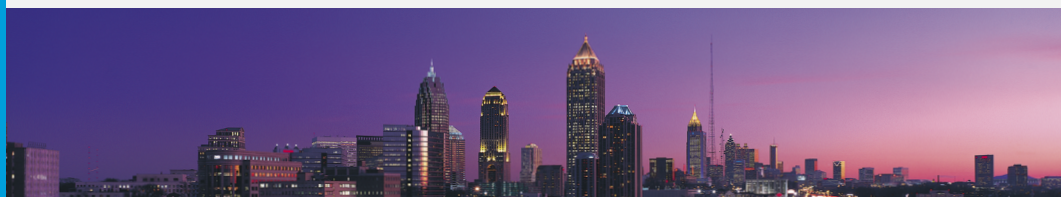
AT&T came in with a proposal to enhance both their connectivity options and their bandwidth using an AT&T SD-WAN and VMware solution with multiple connectivity types such as AT&T Dedicated Internet, AT&T business fiber and broadband aggregation.

To secure the deal, AT&T conducted a proof-of-concept (POC) in the company's networking environments, engaged engineers from both AT&T and VMware, leveraging these resources for the best chance of winning the deal.

Accepting this proposal, the airline then leveraged the proposed solution. This allowed for:

- Multiple connectivity types
- Better visibility
- Reliable and secure connectivity
- A hardware refresh

Through leveraging AT&T SD-WAN with VMware, not only did the enterprise adopt SD-WAN technology to improve application performance, but they are also saving money by changing the type of WAN they use from costly, legacy TDM, T1 sites.





Enable your network and digital transformation with AT&T SD-WAN with VMware

Software-defined WAN is revolutionizing the business WAN space with its ability to bring virtualization to the Edge. Businesses are picking up on the benefits SD-WAN has on overall network performance and user experience with Global SD-WAN market revenues forecasted to grow at a CAGR of 50% to reach \$4.5 billion in 2023.

At the end of the day, for our team and yours, it's all about the customer experience. Which is why we have a dedicated customer experience team involved in every Managed SD-WAN Services engagement and it's why here at AT&T, we put heavy emphasis on transparent, consistent communication and accountability.

The key benefits of SD-WAN that are driving its adoption among businesses are:

Increased flexibility by utilizing a combination of both private and public links.

Increased agility as network policies can be centrally defined by a software and applied to Edge devices.

Rapid deployment of branch sites as the Edge device comes with zero-touch orchestration that can be set up in minutes, and the branch can be operational using wireless links.

Application-aware routing feature of SD-WAN enables your network administrators to optimize cloud connectivity as the Edge device recognizes traffic that can be sent directly to the cloud over internet links, versus that which is intra-network and can go over public or private links.

Talk to a business expert

 **833.552.1591**

AT&T business experts are available
M - F 7am - 7pm CT