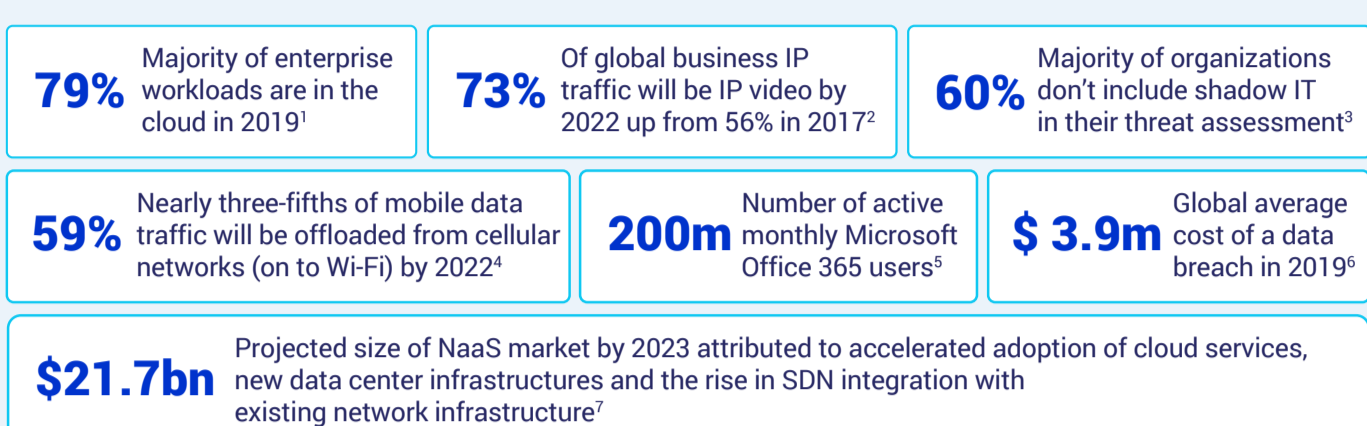




SD-WAN: A network fit for the digital economy

The corporate network is facing unprecedented pressure from the growth of cloud, mobility, voice, and video traffic. And with companies increasingly decentralized, branch office networks are becoming more complex and expensive to scale and secure. The result is spiraling network costs, poor end-user experience, increased security risks, and a management nightmare.



An agile network

Enterprises are already adopting Software-defined wide area networking (SD-WAN) as a long-term solution for these network challenges. SD-WAN creates an overlay on an existing enterprise network, making it more flexible without the expensive and time-consuming challenge of ripping and replacing existing connections. It abstracts the control and configuration functions hardwired into network routers and switches, and redefines them in software.

\$ 5.25bn	global spending on SD-WAN infrastructure products in 2023 ⁸
\$ 4.36bn	global enterprise spending on SD-WAN managed services in 2022 ⁹

83% A strong majority of enterprises considering SD-WAN adoption in 2019 and 43 percent have already installed or are piloting service¹⁰

Optimized connectivity

SD-WAN unifies multiple network connections into a single virtual connection. It can aggregate 4G/5G, MPLS, dedicated and broadband internet and other connections at a single location to provide more bandwidth for a demanding application. This also makes the network more efficient by reducing or eliminating idle time on network links.



Combine multiple connections for better performance



Active-active set-up means better utilization



Manage networks centrally to improve efficiency and cost



Intelligent path control

SD-WAN devices automatically route network packets along the most appropriate links to reflect network policies. Traffic that needs low latency can be routed along faster links, while less critical traffic can take a slower route.

Intelligent path control also allows businesses to route traffic quickly around network outages or congestion, switching between connection providers as appropriate to increase network reliability.



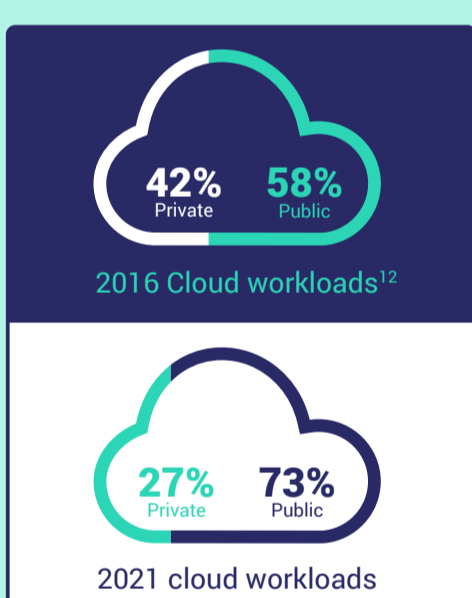
Plan most efficient route for cloud services



Route around network congestion



Identify and block suspicious behavior



Application optimization

SD-WAN administrators can optimize the network to support applications with specific needs. They can define rules to prioritize a low-latency video application, for example, or even dynamically adjust support for applications based on specific business conditions. This leads to improved user productivity.



Optimize voice and video for better collaboration



Support chatty apps over the Internet with proper optimization



Change business rules rapidly

250	milliseconds maximum average latency for good SAP performance ¹³
150	milliseconds maximum latency for good Skype for Business voice ¹⁴

Secure all sites

An SD-WAN overlay network is designed from the ground up to be secure, so that traffic travelling across different third-party providers' network connections is safe from compromise. Administrators can set permissions for different applications centrally in accordance with defined policies.



Use internet safely and more effectively



Update security policies centrally



Use virtualized functions to secure branch offices

Network must evolve

SD-WAN is the latest step in the long-term evolution of the corporate network and will in time become much more applications centric, supporting uptime, performance and real-time routing.



SLAs guaranteeing application performance



Network-aware applications that configure their own routing



Real-time routing through machine learning

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Sources: ¹Enterprise workload distribution by cloud type worldwide in 2018 and 2019, Statista, 2020. ^{2,4,11}Cisco Visual Networking Index, Cisco. ³Forbes Insights, 2019. ⁵Microsoft FY20 Q1 earnings call. ⁶Cost of a data breach report 2019, IBM/Ponemon Institute. ⁷Network as a Service Market Description 2019, MarketsandMarkets™. ⁸SD-WAN Infrastructure Market Poised to Reach \$5.25 Billion in 2023, According to New IDC Forecast, IDC. ⁹SD-WAN - What it means for enterprise networking, security, cloud computing, Network World/Gartner (May 2019). ¹⁰Survey Says: SD-WAN is Growing, Our New WAN Manager Survey Has All the Details, TeleGeography blog. ¹²Cisco Global Index Highlights Tool, Cisco. ¹³How to identify high network latency and bandwidth within SAP Cloud for Customers, Community Blogs, SAP. ¹⁴Plan network requirements for Skype for Business 2015, Skype for Business blog, Microsoft.