SD-WAN

Democratising the network
with disruptive SD-WAN

commschoice
we simplify your journey to the cloud

Democratising the network with SD-WAN

Next generation managed Software Defined Wide Area Networking (SD-WAN) services can connect your geographically diverse business using readily-available public Internet links, and establish Quality of Service for latency sensitive apps. CommsChoice SD-WAN can save more than 40% compared to legacy MPLS network costs.

Until very recently, businesses have been restricted to sourcing expensive, complex and inefficient MPLS Wide Area Networks from carriers and network providers. Today, building a secure, flexible, high performance network to cater for your multi-site organisation - whilst dramatically reducing cost - has never been easier.

Wave goodbye to complexity, increasing CAPEX and potentially months of deployment; say hello to reduced costs, rapid provisioning and centralised orchestration of your branch network.

Think business-grade networking outcomes using cheap Internet access links.

› **CommsChoice** has valuable experience having successfully deployed Australia's largest SD-WAN network to date (November 2018) with more than 230 sites

› **Performance**: SD-WAN delivers low latency, minimises retransmission, and improves quality of experience

› **Cost savings**: use public Internet, rapidly reducing total cost of ownership (TOC)

› **Resilience**: use multiple bonded links to create virtual bandwidth in areas of poor connectivity

› **Security**: rapidly build IPSec tunnels, service chain cloud firewall to protect and enable network segmentation

› **Networking**: easily connect users to applications, embrace migration to the cloud, quickly deploy new capability, and edge breakout for great cloud app experiences

› **Peace of mind**: 24x7 support, High Availability options - and meaningful service levels.

› **Simplicity**: easy configuration using the point and click cloud orchestrator, rapid deployment, no command line interface.

What is SD-WAN?

SD-WAN simplifies the management and operation of a WAN by abstracting network operations from their management. A key application of SD-WAN is to build high performance WANs using low cost and commercially available public Internet, enabling businesses to partially or wholly replace expensive private WAN connectivity such as MPLS.

The global buzz surrounding SD-WAN has been appropriated, sometimes confusingly, by technology vendors across WAN optimisation, link bonding and router technology. Choose wisely when selecting a partner to ensure you source an appropriate solution with the following core capabilities as a priority:

› **Centralised orchestration**

› **Deliver effective Quality of Service (QoS) in a public Internet network**

› **Steer traffic across multiple links according to network conditions**

› **Low touch, rapid provisioning**

› **Deploy over existing infrastructure**

› **Provide security and other services with service chaining**

› **Replace branch routers**

SD-WAN is no longer bleeding edge - Gartner has predicted that by the end of 2019 approximately 30% of enterprises will deploy SD-WAN technology in their branches.

In contrast to traditional WAN, SD-WAN reduces network costs, allows for greater agility, and rapid deployment – the software allows you to spin up new environments quickly, so you can respond to your evolving business demands quickly.   For example, think about retail pop-up branches gaining secure access to applications and collaboration tools using existing DSL Internet, compounded with a 4G dongle. Or consider centralised orchestration ensuring continuous alignment with business policy across the entire network.

Two Links Are Better Than One

Consign network outages to the past with managed SD-WAN

SD-WAN unifies multiple network connections into a single, bonded virtual link. It can aggregate multiple 4G, MPLS, Ethernet, Internet, wireless and other access technologies at a location to provide flexible, consolidated bandwidth for demanding applications.
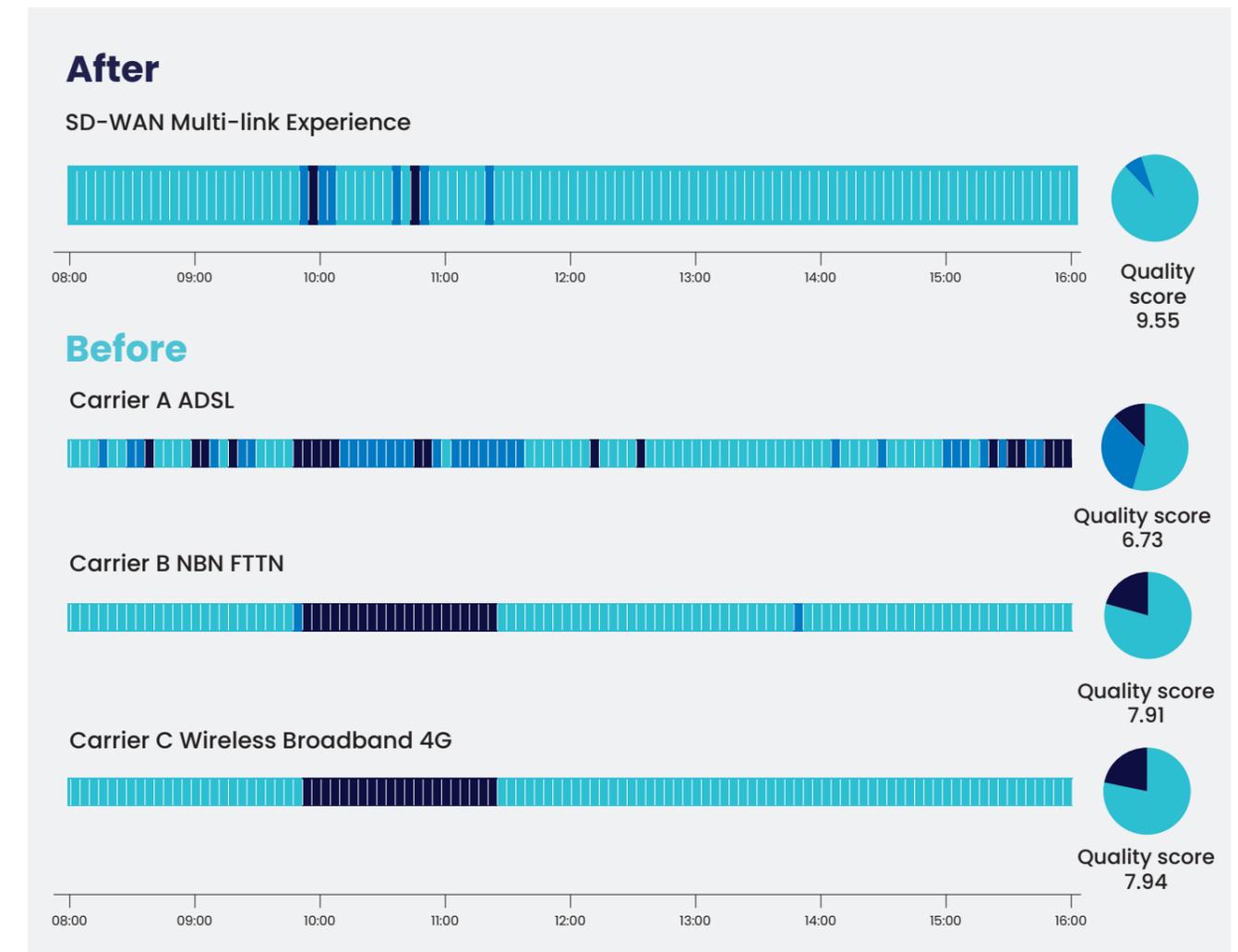
This also makes your network more efficient by eliminating idle time on links. SD-WAN enabled devices automatically route network packets along the most appropriate path to improve performance.

As shown in the diagram below, a combination of lower quality links can be united in to a virtual, aggregated high performance link.
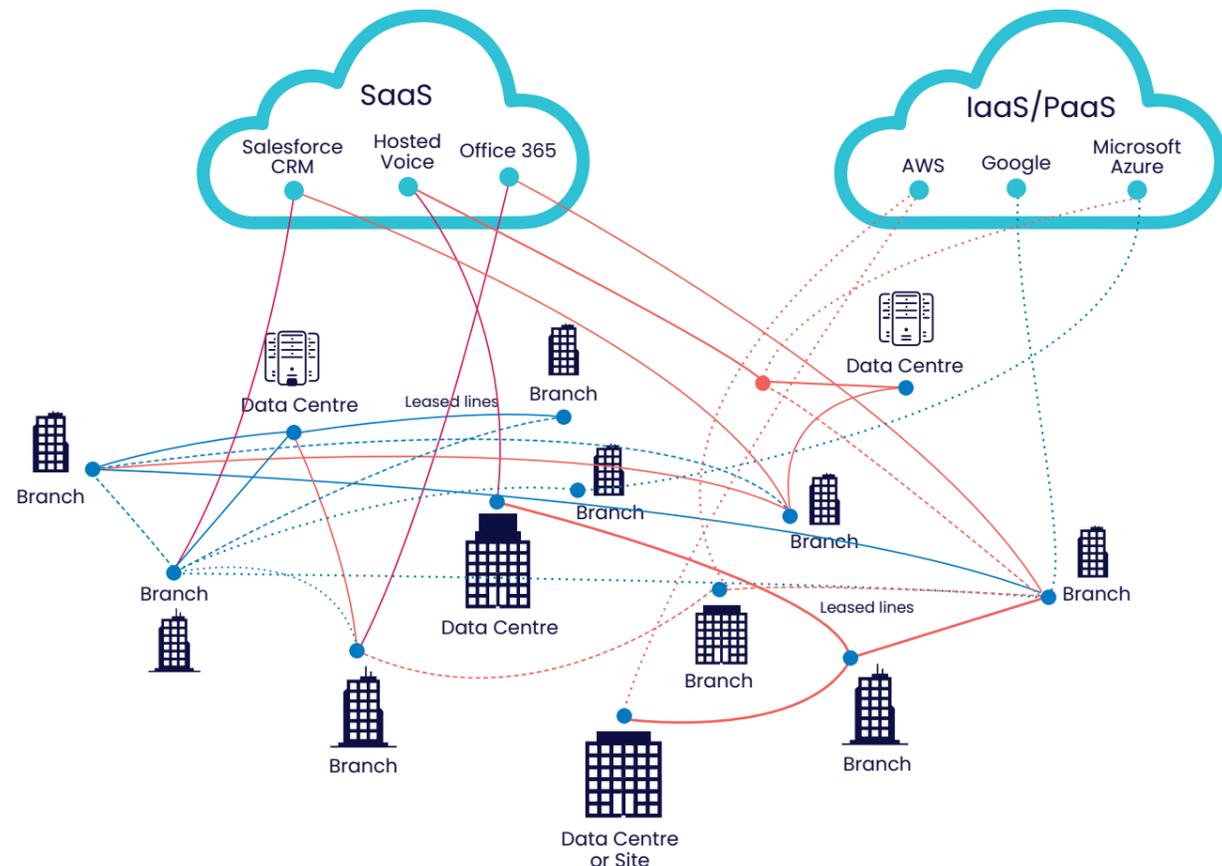
Application steering is driven by link performance metrics, intelligent application learning, business priorities and link cost. It delivers sub-second brownout and link failure protection to maximise application availability, and remediates degradation through forward error correction, activate jitter buffering and packet synthesis.

Below is an example of the impact of an outage on a multi-link SD-WAN. The customer experienced little downtime, impact was minimal - and an ongoing aggregated link quality score of 9.55 was achieved.

An 'Active-Active' paired edge device configuration results in High Availability (HA) to maximise uptime.

After

SD-WAN Multi-link Experience

| 08:00 | 09:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 |

Quality score
9.55

Before

Carrier A ADSL

Quality score
6.73

Carrier B NBN FTTN

Quality score
7.91

Carrier C Wireless Broadband 4G

| 08:00 | 09:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 |

Quality score
7.94

Traditional WAN - Progressively Complex

SaaS
- Salesforce CRM
- Hosted Voice
- Office 365

IaaS/PaaS
- AWS
- Google
- Microsoft Azure

Data Centre
Branch
Leased lines
Data Centre
Branch
Branch
Branch
Branch
Branch
Branch
Data Centre
Branch
Leased lines
Branch
Data Centre or Site

SD-WAN – Unmistakably Simple
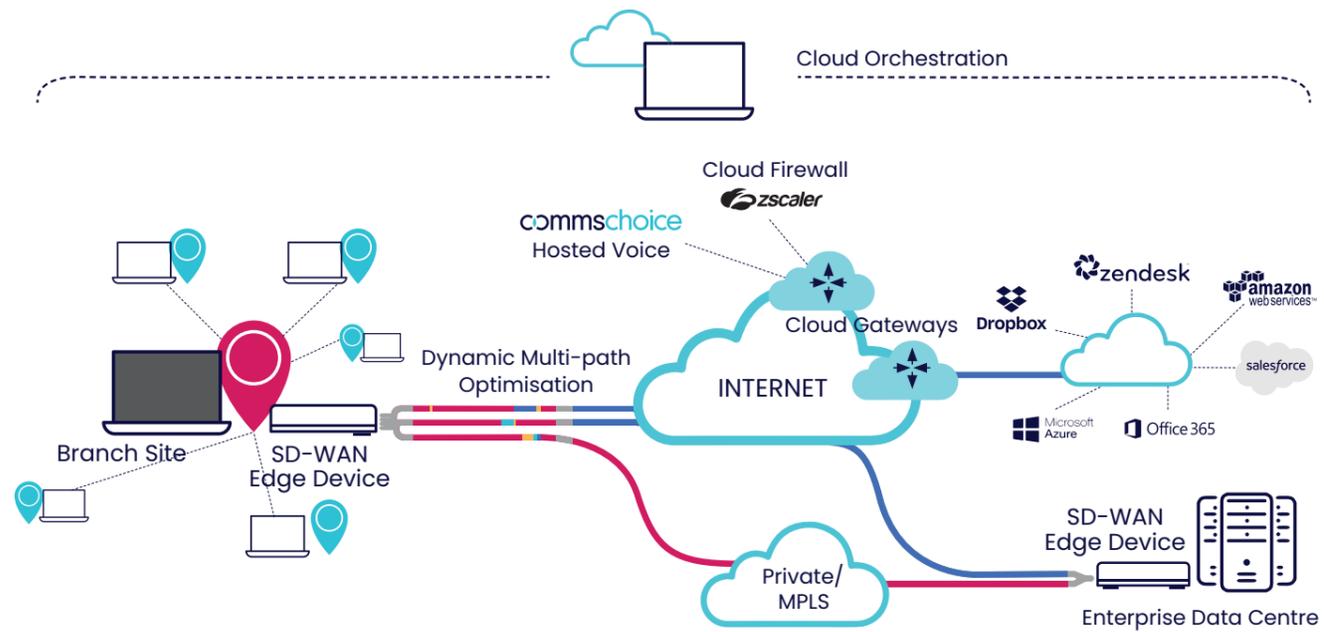
Cloud Orchestration

Cloud Firewall
zscaler

commschoice
Hosted Voice

Cloud Gateways

INTERNET

Dropbox
zendesk
amazon web services

Microsoft Azure
Office 365
salesforce

Branch Site
SD-WAN Edge Device
Dynamic Multi-path Optimisation

Private/MPLS

SD-WAN Edge Device
Enterprise Data Centre

'SD-WAN is advancing towards mainstream adoption. It's currently estimated SD-WAN will comprise 25% of all WAN traffic by 2021.[1] The worldwide router market declined 2.5% year over year in 2Q2018 with revenues of $3.8 billion, according to the IDC Quarterly Router Tracker.'

What has everyone talking about SD-WAN?

The explosion of SD-WAN has caught the telecoms market by surprise. The technology has matured quickly. As Enterprise customers demand more flexible, simple and cost-effective cloud-based solutions the popularity of SD-WAN continues to rise. There are some 40 different vendors in the appliance landscape; it goes without saying that market consolidation (and consolidation of product lines) is likely – making it important for enterprise buyers to do their homework.

In a recent Frost & Sullivan study 51% of Enterprises surveyed indicated that they would deploy SD-WAN in the next 12-24 months. 33% of respondents had either already deployed an SD-WAN solution or had deployment underway[4].

Clearly SD-WAN is here for the long haul; we can only expect the growing trend to accelerate over the next few years. Here's some trends we're seeing that make SD-WAN such a hot topic right now.

SD-WAN is advancing towards mainstream adoption. It's currently estimated SD-WAN will comprise 25% of all WAN traffic by 2021[1]. The worldwide router market declined 2.5% year over year in 2Q2018 with revenues of $3.8 billion, according to the IDC Quarterly Router Tracker.

1 IDC forecast that the SD-WAN market will grow at 40.4% CAGR from 2017 to 2022 to reach AUD$6.2B[1]

2 Enterprise branch bandwidth is rising; network traffic is doubling every 3 years[2]

3 95% of all organisations will be relying on the SaaS model for application delivery by 2020[3]

4 Growth in global Internet traffic is expected to increase by 3x from 2016 to 2021[1]

5 The percentage of WAN being managed using SD-WAN will increase to approximately 30% by the end of 2019[4]

1. IDC SD-WAN Infrastructure Forecast. 2. VNI Forecast 2016-2021. 3. 2018 IDH Cloud Computing Study. 4. Gartner

What business challenges does SD-WAN address?

Challenge	SD-WAN Capabilities	Business Value
Manage ROI	› Augment or replace your existing MPLS network with lower-cost Internet links › Flexible, rapid low-touch deployment (using physical appliance or Network Functions Virtualization (VNF) › Remove requirement for Virtual Private Network (VPN) and security hardware › Simplify ongoing operations, enabling business transformation, with the cloud orchestrator	**Reduce cost of network ownership**
Accelerate Access to Cloud Apps	› Improves cloud application performance by intelligently breaking out Internet traffic at the edge. Backhauling Internet traffic from the branch to the data centre doesn't make sense in a cloud-first world › Enable a multi-cloud strategy using Amazon Web Services, Microsoft Azure, Google Cloud, Softlayer and more	**Improve productivity**
Maximise Availability, Performance and Optimize Bandwidth	› SD-WAN dynamically load balances across multiple links to deliver high availability and flexible capacity - issues that cripple traditional Telco MPLS networks › Delivering application-level SLAs over any transport using link optimisation and dynamic steering › Error correct to achieve MPLS-style performance using a mix of transport types including consumer broadband › Deliver resiliency by aggregating multiple links, and use all available bandwidth › Overcome the effects of high latency with fully integrated, optional on-demand WAN optimisation › Enabled devices automatically route network packets along the most appropriate links and improve application performance › SD-WAN overcomes the complexity of traditional MPLS environments - resulting in additional latency and poor user experiences - by automatically routing traffic directly through the most appropriate path and handling security closer to the edge	**Enhance user experience**
Improve Network Resilience	› Twin edge appliances deliver resilient High Availability (HA) cluster architecture › Establish virtual tunnels across multiple links with sub-second failover in case of degrading link quality › Provide the highest level of resiliency while ensuring design simplicity via an intelligent software stack	**Increase business uptime**
Deliver reliable, contemporary security measures	› Segment apps based on simple policies › Employ a zero-trust security model based on an app-whitelist approach › Secure cloud-driven provisioning › Orchestrate security policies with service chaining e.g. Check Point, Fortinet, Palo Alto Networks, Zscaler › SD-WAN provides a secure overlay independent of your connectivity. Vendors continually invest in developing and deploying the most reliable and contemporary security measures possible › Turn Internet connections into secure VPNs using SD-WAN encryption tools. › Native zone-based firewalls and access controls to identify and block suspicious behaviour complement this capability › Dynamic path selection delivers better resilience and is programmed smarter delivering a more secure environment	**Accelerate problem resolution**

Escalating carrier costs, inflexible configuration, slow deployment, security risks and network management headaches. Sounds familiar? You're not alone.

As SD-WAN solutions rapidly mature, innovative service providers – like CommsChoice - will continue to evolve their offering to provide optimised solutions that can deliver a truly competitive advantage to enterprises in terms of reduced CapEx, lower operating costs, improved network performance and game-changing analytics.

Challenge	SD-WAN Capabilities	Business Value
Provide Powerful Visibility and Control	› Quickly address outages and their causes with deep, real-time visibility into application and network performance (including packet loss, latency and jitter) › Run reports to analyze bandwidth usage statistics and WAN metrics › Investigate cloud application usage, traffic patterns and link loading	**Accelerate problem resolution**
Simplify Architecture and Deploy Quickly	› Eliminate routers as the SD-WAN edge device combines routing and firewall › Permits easy security service chaining › Manage configuration edge to edge – without branch IT staff - using the Cloud Orchestrator › Extremely simple provisioning › Rapid deployment is now a reality. SD-WAN is deployed in days, not months – and without the need for IT involvement on site. › Benefit from greater agility and faster application delivery	**Accelerate problem resolution**
Improve Automation	› Create central business intent policies to define how application traffic is routed between sites › Simply orchestrate and automate the deployment of consolidated network functions such as firewall › Manage, configure, report and maintain branch office network services with a single pane-of-glass orchestrator	**Accelerate problem resolution**
Integrate Seamlessly with Existing WAN	› Integrate with existing routers 'in line' and slowly remove them given time to minimise disruption › Overlay and consolidate existing MPLS and Internet access networks under contract › Use Internet services securely with encrypted tunnels and service chaining to cloud security services	**Accelerate problem resolution**
Gain visibility of the WAN	› Central orchestration provides deep insight into granular path performance, application usage and network traffic	**Accelerate problem resolution**

Ready to simplify your journey to the cloud?

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