WHAT'S DRIVING THE NETWORKING MARKET IN 2022?

Exploring the Priorities for Enterprises and

Opportunities for Service Providers

epsilon
a **kt** company

SUMMARY

1.

LOOKING BACK AND BEYOND – WHAT TO EXPECT?

The past two years have seen the enterprise IT market pivot. In the face of business disruption, digital transformation became a necessity, and cloud solutions surged as the world connected in new ways. While the transformation seen in 2020 was in the face of a global lockdown, 2021 saw more developed strategies as businesses continued to evolve their operations and technologies.

IDC predicts that direct digital transformation investment will grow at a compound annual growth rate (CAGR) of 15.5% from 2020 to 2023 to reach $6.8 trillion.

It is no longer just about digital transformation, but about building a foundation for continual transformation and adapting to the new way of work. The pace of change in today's market has made it crucial to continually evolve and optimise the technologies that keep businesses competitive.

2022 will be defined by the technologies that enable long-term evolution and transformation for businesses on a global scale. As multi-cloud becomes the new norm and a growing number of solutions evolve with software at the core, organisations have a chance to continue to shape their business plans and make the most of innovative technologies with a more strategic approach.

This presents many opportunities for enterprises to enhance their business operations, and service providers to capture new revenue streams more quickly and efficiently through value-adding partnerships. Enterprises have the potential to advance their processes with leading edge technologies such as multi-cloud and software-defined wide-area networks (SD-WAN), and service providers can improve customer experience and win more business by offering a more comprehensive solutions set.

From clouds and networks, to 5G, automation, artificial intelligence (AI) and security, enterprises and service providers need to evolve their solutions set with the technologies set to transform the market in 2022 and beyond.

2.

CLOUD & NETWORKING CHALLENGES

Enterprises will likely face a multitude of challenges in today's evolving networking market, which in turn causes challenges for service providers trying to keep up with their needs. Service providers need to be aware of some of the top enterprise challenges, and how to overcome them with the right solutions and expertise.

- **Changing Enterprise IT Requirements –** Enterprises need the same level of functionality, visibility, and control in the cloud as they have on-premises.

- **Lack of Visibility & Troubleshooting –** The top cloud providers do not expose the detailed operational visibility or troubleshooting that enterprise IT requires.

- **Limited Security –** End-to-end encryption for data in motion, secure network segmentation, policy-based ingress, and egress control and both corporate and regulatory compliance and governance are all significant challenges for enterprises.

- **Manual Process –** It is difficult, error prone and resource intensive to manually configure and maintain an enterprise cloud network environment of any significant size.

- **Architecture Gap –** Enterprises running on a single cloud are limited to its native construct. When scaling their businesses, they will face challenges in connecting their architectures without the right model.

- **Multi-Cloud Connectivity –** Most of the main cloud service providers (CSP) are not interested in making it easy to expand to other cloud providers.

- **Complexity & Skills Gap –** Each cloud has unique networking capabilities and limitations, which require skills and knowledge that traditional network engineers lack.

On top of these challenges, service providers need to be aware of which technologies are rising and falling in the market and be prepared to pivot their solutions set accordingly to stay competitive.

4

3.
TECHNOLOGIES & TRENDS IN THE NETWORKING MARKET

HYBRID MULTI-CLOUD

In today's cloud-first world, it is no longer just about connecting to the cloud, but connecting between multiple clouds with greater efficiency. We are way past the cloud adoption phase and businesses have already started to understand the benefits of using private, direct connections to the clouds.

According to Gartner, global cloud revenue is set to total **$474 billion in 2022**, up from **$408 billion in 2021**. On top of this, Market Research Future expects the global hybrid cloud market size to reach **$173.33 billion** with a CAGR of **22.25% from 2019–2025**.

In 2022, the way that organisations manage multi-cloud across their infrastructure will continue to change. Visibility and security are becoming higher priorities, and there's focus on integrated security vs standalone security and hardware (appliances) or software.

Within this hybrid multi-cloud management, more enterprises will be using SD-WAN for managing access and connectivity for remote workers, offices, branches, clouds, and data centres. Remote working or hybrid workplace is set to proliferate as organisations reap greater benefits in productivity and efficiency. This further accelerates the adoption of cloud services in their long-term transformation strategies.

Enterprise IT needs to consider and evaluate cost vs efficiency with such increasingly distributed workforce. Legacy WAN technologies will not be able to keep up with the pace of innovation and transformation.

AUTOMATION, ANALYTICS AND AI

In terms of compliance, regulations can already be challenging for enterprises. In the coming year, we can expect an increasing number of complex regulations for enterprises to manage.

In the face of this, we will see a push towards software-based solutions with analytics, automation, and AI to address compliance. By approaching them with deep insights, advanced technologies and evolving intelligence, enterprises can better overcome compliance challenges and re-focus their energy into other aspects of their business such as innovation and continual transformation. It is important for service providers to be aware of how to support them with this.

A **growing number of organisations** will also seek to adopt various Anything-as-a-Service (XaaS) solutions for added flexibility, scalability, and cost-efficiency in their long-term strategies. This will see **many services being automated** to replace manual processes for repetitive tasks – such as the deployment of network services using Network-as-a-Service (NaaS).

XaaS will enable enterprises to use whatever solution they need without heavy upfront investments or in-house specialists, making it a sustainable option for their continual transformation roadmaps. Businesses will need to ensure that these applications are integrated across the business with the use of SD-WAN and cloud networking solutions.

2022 will also see a growing focus on designing and tailoring applications to the specific business needs of customers. As the business environment becomes increasingly complex, it will become even more important for service providers to serve the unique needs of enterprises with expert support and unique solutions.

MPLS → SD-WAN

> TeleGeography's latest WAN Manager Survey found that MPLS usage across enterprises dropped by **36%** between **2018 and 2021**, while SD-WAN saw a **25%** growth between **2018 and 2020**. **2022 will see an even larger** shift from MPLS to SD-WAN.

When looking into their continual transformation strategies, enterprises are seeking more agile ways to maintain or even improve control and security across their networks at lower costs. Eventually, SD-WAN will simplify the WAN infrastructures and help businesses better manage multiple locations and cloud-hosted applications with app-driven security features.

5G LAST MILE

As more companies transition to become cloud-first, the importance of having the right underlay network to support them is essential. They need a simple, efficient, and effective way to connect their enterprise IT infrastructure around the world to networks and interconnection services.

In 2022, an interesting 5G use case could be utilising it for more last mile connectivity. 5G removes the last mile barrier with rapid speeds and lower latencies, improving connectivity performance for enterprises end-to-end, even in the most challenging locations.

Since it is a wireless technology, 5G could also overcome the provisioning and deployment issues often seen with last mile access. Enterprises can instantly get the connectivity they need, where they need it, without needing to wait for physical connections to go live, and without the risk of physical disturbances. It reduces risk, while increasing performance and efficiency into the future.

SECURITY: REACTIVE → PROACTIVE RISK MANAGEMENT

There is an increasing focus on data security, due to not only the growth in the number of security breaches, but also the rising costs associated with them. A single hack can be enough to severely affect an enterprise's bottom line as well as reputation. Having the right precautions and business continuity processes in place is vital for long-term success and brand confidence.

As a result, we can expect to see a proactive reduction of risk, as security paradigm shifts from reactive to proactive. **More organisations** will be seeking business continuity solutions that can guarantee **24x7x365 protection** and provide the necessary steps to move forward with confidence in the face of a breach.

We can also expect not only enterprises to seek more security solutions, but also for all kinds of service providers to implement and integrate higher security measures and solutions into their offerings for customers. These service providers will also likely set up and invest in customer experience functions that focus on service delivery, user satisfaction, and other value-added services.

4.

APPLICATION-ORIENTED NETWORK ARCHITECTURE

The way that networks are being architect is changing. Companies need to ensure that their growing business functions can be easily accessed and inter-work seamlessly.

The first thing an organisation should consider when designing or re-designing its network to be a business operations enabler, is not starting with the cloud or the data centre, not even the office. It should start with the applications and then the consumers. Consumers does not only refer to the people using the network, but also other apps and systems that depend on data from other apps and systems, to perform their function.

Networking is one of four cornerstones of business operations. The other three being the housing environment, the code and operating system function, and people. Any one of these four cornerstones can impact the performance of business operations. Networking can often be forgotten as being less important. Once a systems and/or application audit is performed, there is a simple next step – define the interfaces between each of the systems and applications and categorise them. Are they mission critical? Are they core or non-core interfaces?

The simplest of architectural diagrams can then be created. Organisations can map that against their current network and then start looking into the network tools that are now available as substitutes for their existing services. By making changes such as replacing a full MPLS network with a combination of SD-WAN and 'as a service' networking, speed and efficiency can be improved, as well as the overall user experience end-to-end.

Once this basic design phase is completed, organisations can look into overlay technologies that can run across all the transport technologies to provide an end-to-end network controller, including cloud networking capability and security.

5.

SOLUTIONS TO CONSIDER IN 2022

• NAAS-ENABLED CONNECTIVITY

Infiny is a self-service NaaS platform built to deliver new levels of agility, simplicity, and performance directly to enterprises, as well as through the partners via service providers. It enables customers to instantly buy and deploy dedicated connectivity for digital and cloud services around the world.

One Platform. Four Powerful Solutions.

✓ **Data Centre Interconnection –** High-performance connectivity between the leading global data centre locations.

✓ **Direct Cloud Connect –** Scalable, private, and secure direct connection to an ecosystem of world-leading cloud service providers.

✓ **Access to Internet Exchanges –** Connect to the world's leading internet exchanges globally through remote peering.

✓ **Global Inbound Numbers –** Procure geographic, national, mobile, and toll-free numbers in over 100 countries through a single platform.

Infiny serves as a customer-first platform that accompanies the entire customer journey from the first touchpoint to every service experience with Epsilon. Along with Infiny, customers and partners can also take advantage of Epsilon's portfolio of connectivity solutions such as Access (last mile) to implement an end-to-end networking solution.

CLOUD NETWORKING

Epsilon's Cloud Networking solution allows service providers and enterprises to directly control native cloud networking constructs to maintain cloud simplicity and automation.

It delivers end-to-end single and multi-cloud services with the automation, operational visibility, and control enterprises need, with the tools and capabilities to deploy highly secure solutions in the cloud with outstanding performance for customers.
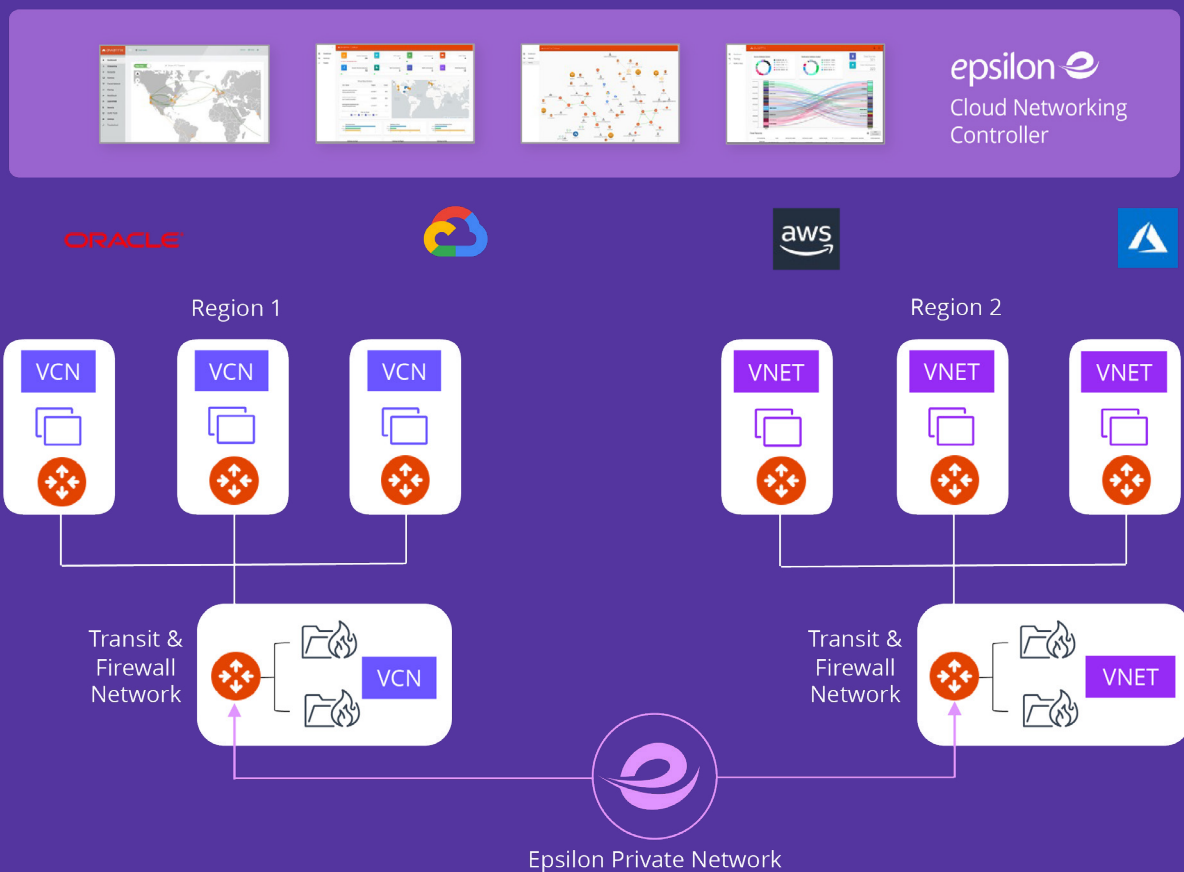
Benefits

✓ **Fast Deployment –** Our Cloud Networking solution accelerates cloud network deployments to support the pace of business and app owners. Service providers and enterprises can move faster to meet demands at the click of a button.

✓ **Simple & Visible –** Through a single pane of glass, enterprises can view their entire cloud network and simplify their cloud network operations with full visibility to identify and resolve problems rapidly.

✓ **Security & Troubleshooting –** Easily solve multi-cloud networking, security, visibility, and troubleshooting challenges that enterprise IT faces every day.

✓ **Full Control –** Deliver a multi-cloud network architecture with a common network data and operational control plane, to give the control needed to succeed.

CASE-STUDY

Supporting an E-Commerce Boom Across Indonesia with Multi-Cloud Orchestration and Security

Tokopedia, an Indonesian technology company specialising in e-commerce, selected Epsilon to provide a secure and high-performance multi-cloud network underlay in Singapore. The partnership enables Tokopedia to extend its cloud capabilities and power the leading online marketplace in Indonesia.

The Challenge

Tokopedia needed to expand its cloud networking capabilities to meet the rising e-commerce demands in Indonesia while ensuring an optimised quality of experience for customers. However, without its own dedicated network backbone, dynamically scaling bandwidth between cloud environments to support and meet the changing end-user usage demands proved to be a challenge.

The Solution

Tokopedia partnered with Epsilon for secure, reliable and high-performance connectivity between its production environments across multiple cloud providers. Epsilon's managed cloud routing service connects Tokopedia's production environments in Amazon Web Services (AWS), Google Cloud Platform and Alibaba Cloud via multiple high-speed Cloud Connects, serving the technology unicorn's cloud to cloud needs via Epsilon's private network. Epsilon's solution is automated through NaaS platform Infiny, so the e-commerce giant can quickly provision new cloud interconnect services according to bandwidth demands.
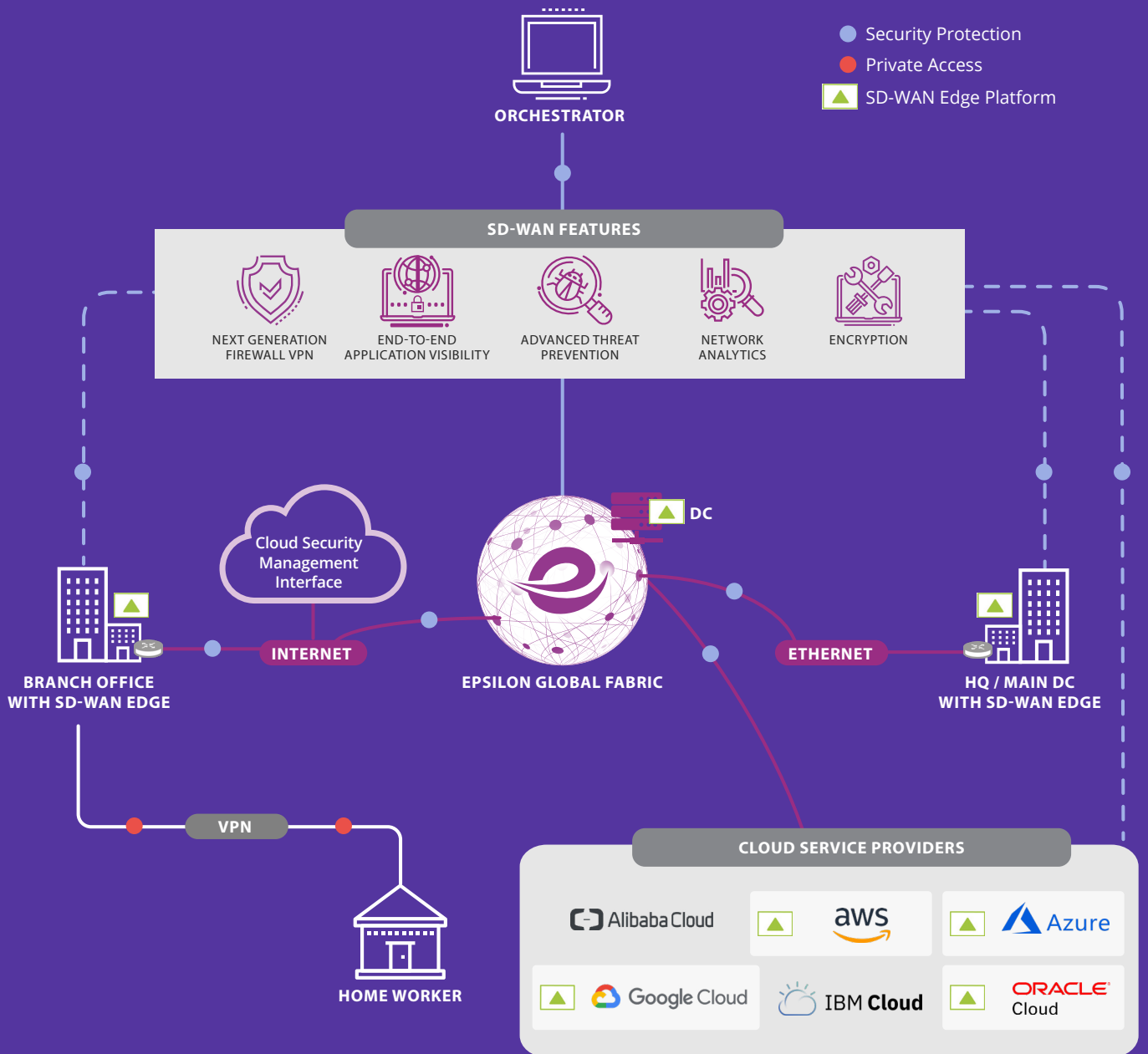
Outcomes

Cloud Connect provides a scalable and flexible solution for Tokopedia to grow its bandwidth according to rising e-commerce demands in Indonesia, and deliver a secure marketplace platform for its 10+ million merchants and 100+ million monthly active users. Through Epsilon's network fabric, Tokopedia is able to connect and manage its production IT infrastructure in a multi-cloud environment with improved flexibility, scalability, availability and quality of experience.

SD-WAN WITH INTEGRATED SECURITY

An efficient SD-WAN solution solves the problems that arise from trying to combine conventional WANs to cloud-based networks, applications, and services. SD-WAN provides huge performance increases without sacrificing security and allows today's geographically dispersed enterprises to realise the transformation promise of cloud computing, lowering capital and operational costs.

Epsilon SD-WAN solution enables enterprises to build a modern WAN architecture that drives maximum value from their cloud and digital investments. By using a centrally-managed platform that unifies SD-WAN, security, routing, and WAN optimisation, users can securely and intelligently direct application traffic across the WAN — delivering a self-driving wide area network that continuously learns and adapts to the changing needs of businesses.

ORCHESTRATOR

● Security Protection
● Private Access
▲ SD-WAN Edge Platform

SD-WAN FEATURES

NEXT GENERATION FIREWALL VPN

END-TO-END APPLICATION VISIBILITY

ADVANCED THREAT PREVENTION

NETWORK ANALYTICS

ENCRYPTION

Cloud Security Management Interface

▲ DC

BRANCH OFFICE WITH SD-WAN EDGE

INTERNET

EPSILON GLOBAL FABRIC

ETHERNET

HQ / MAIN DC WITH SD-WAN EDGE

VPN

HOME WORKER

CLOUD SERVICE PROVIDERS

Alibaba Cloud

▲ aws

▲ Azure

▲ Google Cloud

IBM Cloud

▲ ORACLE Cloud

Benefits

✓ **Increased Agility and Continuous Adaptability –** Application-aware routing ensures maximum performance for all apps and services, with routing changes automatically executed in response to changes in demand and usage patterns.

✓ **Simplifying WAN Management with Control, Visibility and Automation –** Full visibility into applications such as throughput usage, latency and jitter stats across all networks, devices, and users. Centrally located orchestrator can auto-deploy applications and policies to over 1000 remote locations.

✓ **Better Application Performance at Lower Cost –** A unified platform gives businesses the freedom to choose the most cost-effective type of network without worrying about performance.

✓ **Take Charge of Security –** Seamlessly integrate cloud security and Zero Trust Network Access (ZTNA) solutions with single-screen management and reporting. Next-generation firewalls can be deployed on-site and in the cloud, ensuring superior security and performance for all applications, services, and for all users.

Service providers can supercharge their network services to better deliver their solutions to customers. Epsilon's Cloud Networking and SD-WAN are overlay solutions that can be offered to enterprise customers with Epsilon's last mile access and ethernet services delivered over a global private network.

BELTON TECHNOLOGY

Moving from Legacy MPLS to SD-WAN for Seamless Manufacturing Operations in the Asia-Pacific

With surging business growth and changing customer demands, Belton Technology Group, a top manufacturer headquartered in Hong Kong, needed to transform its networking capabilities to stay agile and competitive. It needed a cost effective, available, and flexible data communication network between its geographically dispersed offices and manufacturing plants to support its business plans.

The Challenge

Belton Technology needed a complete re-architecture of its WAN network, moving from its current legacy MPLS WAN to SD-WAN. Traditional MPLS is dependent on the PoP in the country where its offices are located, which is inflexible and causes a long implementation phase. The MPLS service was used across HQ and eight offices, so the company needed a seamless and hassle-free solution for migrating to SD-WAN.

The Solution

Belton Technology partnered with Epsilon to completely re-architect its legacy WAN by replacing MPLS with SD-WAN, to fully transform its connectivity across the region. Epsilon's SD-WAN enables an enhanced digital experience with interconnection across the entire network and full control over routing and security services, with support for cloud-based applications and services. Belton Technology stays cost efficient with all the tools and expertise required, without the need to hire specialists in-house.

Outcomes

Epsilon's SD-WAN solution enables Belton Technology to seamlessly expand its network capabilities with a single platform and minimise its dependence on local and global carriers, with end-to-end expert support. It provides the foundation and bandwidth needed to adopt cloud applications and implement IoT in manufacturing plants for further operational efficiency.

AN EVER-EVOLVING MARKET

2022 will be an interesting year for both service providers and enterprises. Businesses across industries have an opportunity to advance their operations with leading edge technologies, while service providers have the chance to improve customer experience and win more business by offering global connectivity solutions to customers.

Whether it is cloud networking, SD-WAN, automation, AI, 5G or security, organisations need to focus on what is needed to enable continual transformation, and in turn, reach new levels of success in the long-term.

With the right expert partner and up-to-date solutions set, any business can amplify its networking journey and reach new levels of growth in a changing market.