

# Getting down to business with CloudVPN

Huawei's CloudVPN solution helps operators enter the B2B enterprise service market by playing to their inherent advantages. Compared with OTT players, operators can offer stricter SLA guarantees, more secure connections, flexible bandwidth customization, and a broader range of services.

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## B2B: A trillion-dollar market

With the B2C market beleaguered by sluggish growth and increasing competition, the B2B market is something of a treasure trove, with rapid growth currently seen in leased line services and cloud data center (DC) services. Alongside big data and IoT, operators will soon have the opportunity to provide enterprise customers with carrier-grade B2B services such as cloud DCs; public, private, and hybrid clouds; cloud leased lines; and cloud security.

Operators worldwide are thus beginning to shift their focus, with AT&T's Domain 2.0 strategy, Vodafone's Ocean strategy, Deutsche Telekom's OTC public cloud, and Telefonica's UNICA project all targeting the B2B space.

Market research by Analysys Mason shows how operators' overall revenues will decline

slightly over the next five years, but the percentage of B2B revenues will rise as the B2B market develops into a trillion-dollar industry from now until 2020.

Operators' service system silos and closed networks are the main obstacles to developing B2B services. On traditional networks, new service provisioning from application to launch can take up to three months, upgrading and maintaining CPE equipment is inordinately expensive, O&M is inefficient, and innovation is inhibited. Moreover, intense competition from OTT players increases the risk of serious user churn and places operators on the competitive backfoot.

Operators need to develop new business models, formulate innovative services, and transform their network architecture. To achieve these aims, SDN and NFV are vital technologies.

## Cloudy with SDN/NFV

Huawei developed its CloudVPN solutions

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specifically to help operators provide enterprises with virtualized and fully cloudified B2B services on SDN/NFV networks.

Comprising CloudDC (data center), CloudVPN (leased lines), and CloudVAS/CloudEC (enterprise cloud communications), CloudVPN allows operators to out-compete OTT players with stricter SLAs, secure connections, and flexible bandwidth customization.

### **Solution breakdown**

CloudVPN is an integrated service platform that offers carrier-grade cloud DC, cloud access, and VAS in an open ecosystem. It has four main components:

**CloudDC:** virtualizes resources and dynamically orchestrates services, which pools the resources of multiple DCs, automates service provisioning, and provides visualized O&M.

**CloudVPN:** applies Overlay technology for rapid connectivity, on-demand bandwidth adjustment, self-help services, and tenant-based performance monitoring and optimization. Diverse access methods are provided at the enterprise side, including low-cost thin CPE and x86 platform-based thick CPE with virtualized network functionality.

**CloudVAS/CloudEC:** CloudVAS includes security and WAN acceleration. CloudEC offers CloudPBX, CloudVC, and CloudUC. The solution leverages Virtual Network Functions (VNF) and flexible service chain

functionality to provide diverse network VAS, including firewall VNF (with security functions such as anti-DDoS, DPI, IDS, and service awareness), load balancing VNF, WAN acceleration, and integrated enterprise communications. Enterprise customers can remotely upgrade and manage internal enterprise communications via portals. Coordinating enterprise cloud communications and the SDN controller enables dynamic QoS, location tracking diagnostics, and intelligent routing, allowing for visualized service operations.

**CloudWAN:** includes SDN evolution solutions for existing networks; SDN-based MAN, transmission networks, and backbone networks, with VNFs including vPE/VRR/vOTN; and newly built WAN networks such as OpenFlow MAN switches.

## **3 deployment phases**

Fully cloudified B2B services cannot be implemented overnight, because business models, service processes, and network architecture are all involved. Deploying CloudVPN is dependent on E2E network evolution, including the DC, enterprise access, and the MAN.

CloudVPN deployment should be divided into the following three phases:

**One:** deploy cloud DC services so the enterprise can migrate applications to the DC provided by the operator. CloudDC enables resource pooling from multiple DCs, automatic service provision, and visualized O&M. Cloudifying enterprise leased lines and

traditional CPE services optimizes connectivity. The CloudVPN/CloudCPE sub-solutions realize online subscriptions and the rapid launch of leased line services, plug-and-play CPE, dynamic bandwidth adjustment, and visualized traffic monitoring and optimization.

**Two:** deploy cloudified VAS on top of cloudified leased line services, providing operators with new sources of business growth such as cloud security, CloudEC, and MAN acceleration services. CloudVAS/EC sub-solutions enable flexible, on-demand, and PAYU provisioning of enterprise VAS.

**Three:** virtualize and fully cloudify network functions on top of cloudified services. This enables seamless connectivity between enterprise and cloud by using Underlay and Overlay networks for elastic bandwidth, and optimizes network performance based on service awareness. Network slicing fulfills a diverse range of on-demand commercial requirements such as vertical industry requirements, 5G backhaul, 4K video, and IoT.

## Less worry, less effort, less cost

Compared to traditional B2B services, SDN/NFV-based CloudVPN services can help operators tap into the blue ocean market of enterprise services

by bringing new commercial value, including flexibility, on-demand provision, high efficiency, and manageability.

**On-demand:** CloudVPN can help operators to provide network services on-demand, thus enabling enterprise customers to subscribe to network services based on their service needs in real time or in advance. Minute-level, automated service provision is possible for services like on-demand bandwidth adjustment, rental servers, CPU and databases, launching cloud security services, cloud-end multimedia communications, and audio and video conferencing. This enables network service and network resource flexibility and on-demand applications, meeting the growing and ever-changing service requirements of enterprises.

**Experience:** CloudVPN helps enhance user experience, allowing enterprises to subscribe to services and remotely upgrade VAS on a self-help portal. Customers can also monitor network usage in real time; for example, when two users use a voice service, the cloud communications server sends the call and quality data to the SDN Controller, which then uses the automated network policy and QoS configuration to optimize the call.

**Efficiency:** CloudVPN can manage

network services more efficiently. CloudVPN services provide management via the operator, allowing remote O&M, which cuts costs. Visualized monitoring on cloud communications quality allows network traffic loads to be monitored and paths optimized automatically in real time.

CloudVPN helps enterprises reduce investment in equipment, because they can lease different kinds of network services from operators on a monthly or on-demand basis. Enterprises can focus on developing their core businesses by handing network services over to the operator, who can then provide one-stop services and management. For the enterprise, this means less worry, less effort, and less cost.

With SDN and NFV, CloudVPN achieves next-gen cloudified network architecture, helping operators bring innovative new business models with diverse, new, and reliable network services to the B2B market. This will increase customer loyalty, attract more SME customers, and emphasize operators' competitive advantages over OTT players.

The unique advantages CloudVPN offers maximize the commercial value of SDN and NFV and lay a strong foundation for operators to access and benefit from the lucrative B2B market. 