

Cutting OPEX and building managed service capabilities with CloudCampus

Driven by the global trend towards enterprise digital transformation, the enterprise campus market continues to expand. According to IDC and Huawei, the global market for campus networks is set to reach US\$24 billion by 2021. Enterprise campus networks will be an attractive new area of opportunity for B2B services for operators.

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A tough market to crack

Currently, the bulk of operators' revenues in the enterprise market comes from reselling private line services and network equipment.

From this position, operators will find it difficult to venture into the field of managed LAN network services. The reasons are obvious.

LAN networks and the services they carry target the massive enterprise market, especially SMEs, but are very complicated. When a network failure occurs, specialist engineers are needed to locate and troubleshoot the fault, and issues can take up to three days to solve. Network engineers are also required on-site to assist with fault location and demarcation in the case of

service layer failures. This approach is both labor intensive and damaging to customer satisfaction.

Given the market space, labor, and time involved, the managed LAN market offers low ROI and tends to be a frustrating market for operators to succeed in.

One example is the largest private line operator in a particular region. With dedicated line revenues accounting for 70 percent of its total revenues and a focus on the enterprise network market, the operator was seeking specialist partners to explore opportunities in the campus network segment. However, constrained by limited personnel resources, it was unable to develop LAN networking services to a significant scale, only gaining 10 or so

customers by the end of 2018. An all too common eventuality for many operators, as in this case, is that they're forced to abandon this market due to limited overall investment.

The cloud managed network

Therefore, the main obstacles preventing operators from entering the managed LAN market are the large number of fragmented enterprise campus networks as well as O&M methods that require on-premise trained personnel.

In 2017, Huawei launched its cloud managed network solution CloudCampus, which enables operators to purchase a cloud managed platform and operate it independently. The one platform allows them to manage tens of thousands of enterprise campus networks simultaneously and exclusively enjoy service revenues.

A series of network management tools integrated into Huawei's cloud managed platform provides enterprise customers with full-lifecycle cloud managed services, including network planning, deployment, O&M, and inspection. Without having to go on-site, network engineers can carry out wireless network planning and network pre-configuration remotely.

At the same time, network data can be synched to mobile devices to guide on-site engineers installing and deploying equipment. After equipment is powered on,

configurations are automatically sent from the cloud to equipment without the need for on-site commissioning by specialists. This cloud deployment method can cut the network deployment cycle from months to weeks or days.

O&M personnel can also perform monitoring and O&M remotely anytime, anywhere without having to be on-site, using troubleshooting tools such as cloud-based user, device and site monitoring reports, and reset package capture. This can reduce OPEX costs by up to 80 percent. Since its release, CloudCampus has been adopted by over ten operators worldwide, which have used it to provision more than 50,000 cloud boxes.

CampusInsight enhances network auto-maintenance

At Mobile World Congress 2018, Huawei launched its Intent-Driven Network (IDN) solution. A standout feature of IDN is that it enables the network to carry out predictive analytics, so network faults can be identified in advance using big data and artificial intelligence (AI), enabling proactive optimization and fault repairs.

CloudCampus integrates CampusInsight's smart campus network analyzer, which can reduce carriers' network O&M labor costs on the basis of full-lifecycle cloud management.

Huawei's CampusInsight enhances automated network maintenance in three stages: network visualization, analysis, and

healing. First, CampusInsight collects data on user dimension access, wireless roaming, throughput experience, and application experience in seconds using telemetry. This enables instant visibility on each user's experience to discover individual network problems.

Then, CampusInsight learns network behavior using machine learning algorithms to analyze big data relating to experience metrics, helping to establish the network dynamic baseline and identify 20 types of failure models in four main categories, including access class and performance class.

CampusInsight can also quickly locate and demarcate group faults based on the integrated analysis of wired and wireless network topology, helping O&M personnel to discover 85 percent of network problems. It can also provide predictive maintenance suggestions by analyzing network trends, preventing problems before they occur.

For example, a traditional network management system cannot actively perceive the quality of typical audio and video service applications, instead relying on manual troubleshooting without an effective means to locate and demarcate problems. CampusInsight can actively perceive audio and video conversations, analyze quality in real time, and then identify and locate the fault point of poor-quality audio and video streams refined to device port level to quickly demarcate faults and close the loop on problems.

On the campus networks of Huawei's Shenzhen headquarters and in over 10 research institutes around the world, CampusInsight has been active since 2015, training AI algorithms, performing iterative verification, generating rapid feedback, and gradually updating to cover the whole network environment. Currently, CampusInsight manages 60,000 pieces of network infrastructure globally, driving the transformation of dozens of networks for dozens of companies around the world.

Harnessing CampusInsight's smart O&M tools, operators can locate and demarcate network problems in minutes and quickly optimize the network, thereby reducing user complaints and improving customer satisfaction, as well as enhancing O&M efficiency and lowering O&M costs.

CloudCampus will continue to integrate new features, such as SD-WAN, to help operators further boost revenues and create a better connected, intelligent world.

New platforms, new business

According to their business needs, operators can opt to rent Huawei's self-built public cloud managed platform. The platform provides network SaaS services for enterprise customers, or operators can purchase a cloud managed platform and operate it independently. They can also take advantage of Huawei's operations experience to quickly develop team and partner capabilities, gain market development experience, and reduce risk.

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As an MSP, operators can offer network construction and O&M services for SMEs and quickly expand the size of the market.

Early stage: multi-branch, large-scale projects

In the initial stage of platform operations before personnel capability and service processes have been honed, operators can focus on two types of customers.

The first are customers with large-scale projects. By delivering and maintaining large project, the carrier can quickly increase labor resources and establish service processes. Examples of large projects in the past two years include a campus network for 500 primary and secondary schools in Latin America, and a Wi-Fi network project for more than 200 clinics for the health ministry in the Middle East. By focusing on one project, operators can quickly establish internal processes, develop personnel capabilities, and build confidence in the managed LAN market.

The second type consists of small and micro enterprise customers. The networks of such customers are generally comparatively simple, consisting of no more than 10 pieces of network equipment. Operators can quickly deliver and pilot operations for this type of customers. One operator in Western Europe adopted this strategy for its cloud platform, focusing on private line customers and targeting scenarios with less than five access points per branch, which quickly developed its team's operational capability. Then, it gradually expanded to the SME market after perfecting its team's operational capabilities.

Development stage: MSP

enablement and expanding market size

After the initial pilot operation phase, operators can develop their own partners and become managed service providers (MSPs). And by integrating the cloud managed platform's simplified O&M capabilities, they can provide MSP enablement services. As an MSP, operators can offer network construction and O&M services for SMEs and quickly expand the size of the market. Huawei's cloud platform supports MSP-to-tenant multi-level decentralized and domain-based account permissions, which meets the needs of most scenarios.

Industry MSP Aihui Health, for example, delivered medical SaaS services for 292 hospitals in 20 months leveraging Huawei's public cloud platform in China. The current network covers over 10,000 pieces of equipment.

Huawei has established a comprehensive support platform covering more than 170 countries, with service experts providing uninterrupted services around the globe. Huawei has also configured a cloud management platform for operations and network O&M, setting up courses to help operators quickly establish operations and O&M capabilities.

Huawei's CloudCampus provides operators with high ROI and low-risk campus network service platforms to help them tap into in the enterprise market. 