

CASE STUDY

# Peruvian Telecommunications Company Deploys Highly Secure Satellite Connectivity Infrastructure in Remote Areas

Internet Para Todos, or “Internet for All,” is a rural mobile infrastructure operator (OIMR) based in Peru. Founded in 2019 with funding from several organizations, the company aims to democratize internet access in Latin America, particularly Peru, by expanding mobile coverage across rural areas.

The company started with about 3,000 2G connection stations, with the goal of implementing 4G service to the 2G stations. Over time, the infrastructure has grown to host 3,700 stations, of which 2,400 are 4G. IPT estimated that about 6 million inhabitants of Peru’s rural areas had no internet connection; today, the company already connects 3.7 million people with 4G service.

As an OIMR, IPT’s model is clear: build and operate a telecommunications network and make it available to multiple mobile operators. These operators pay to use the network, which provides 4G connectivity services to remote communities. Peru’s three main mobile operators currently use IPT’s infrastructure.

## Connectivity Challenges for Rural Areas

IPT uses a central hub model for network traffic. Internet access from different connection sources goes to a central point in Lima, the capital of Peru. From there, it distributes the connection to all the stations in the network. This setup keeps the traffic off the public internet, traveling encapsulated through an IP MPLS network managed by IPT. In this way, the connections are secure, and IPT can guarantee the reliability of the information.

However, Peru’s geography makes connectivity challenging in remote areas. Over time, government and private initiatives brought fiber and microwave networks to some places, improving coverage. Still, some rural areas remain underserved, and terrestrial internet transport services are unavailable.

In 2023, IPT began a tireless effort to improve infrastructure efficiency. The company identified the low-orbit satellite internet service as an accurate option for connecting its remote stations. This cost-effective solution offered deployment flexibility and sufficient performance for 4G service. However, a challenge arose; the low-orbit satellite connection reached the central hub via the public internet, raising security concerns. IPT needed to guarantee secure information transfer and meet customer SLAs.



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**Alessandro Defilippi**  
CTIO  
Internet Para Todos

## Details

**Customer:** Internet Para Todos (IPT)

**Industry:** Telecommunications

**Location:** Peru

## Business Impact

- Highly secure connectivity that integrates with low-orbit satellite internet service
- Maximum security through cost-conscious equipment
- 65 securely connected remote stations
- Scalable solution that allows additional security features to be added in the future

## Secure Satellite Connectivity and Infrastructure

IPT searched for a vendor that could add an extra layer of security to its network. It wanted to ensure satellite connectivity while integrating this system into IPT's existing network. The company chose Fortinet to create a secure tunnel to use low-orbit satellite internet connections without compromising security. "We connected securely between the stations and the headquarters office. In this way, we guarantee end-to-end security for both the mobile infrastructure and the end-users who use the network," says Manuel García, Network Manager at IPT.

IPT's network infrastructure has two critical location types that must be protected: the core in Lima, which receives traffic from remote stations, and the remote stations connected to low-orbit satellite internet connections. The central data center is outsourced to a telecommunications company implementing Fortinet FortiGate Next-Generation Firewalls (NGFWs), which secure the central hub. The second challenge was to secure the remote stations connected to the low-orbit satellite internet service, where the traffic is received and sent to the core. To resolve this issue, IPT deployed an NGFW in each remote site. This project is managed in different phases to cover the entire network shortly.

Today, the company has 65 FortiGate NGFWs deployed at remote stations, 50% of which offer 4G services and the rest 2G services. The low-orbit satellite internet service delivers the signal via IP in an Ethernet cable to the FortiGate. The solution provides the functionality VXLAN over the IPsec, setting up dial-up VPNs between each remote site and the headquarters, thus providing secure transport over the internet.

"By having Fortinet equipment, we can establish a secure tunnel to deliver traffic to the operators," García explains. "With Fortinet, we can take advantage of the satellite connections that go out to the internet, ensuring the data travels securely. With the traditional model, you would have to rent dedicated links, which would make the project very expensive." The goal for 2024 is to have approximately 300 stations with low-orbit satellite internet service integrated into the network, each featuring an NGFW.

## Cost-Effective Deployment

IPT considered several factors when selecting Fortinet as its network security provider. The first one was cost, as the company needed to install devices at remote sites that offered a positive cost-benefit ratio. "We needed affordable devices that still provided all the security features we required," comments García. Fortinet was the only vendor that provided security at a cost-effective price.

Another important aspect is the support offered by Fortinet. IPT appreciated the assistance they received from the local Fortinet team during the project's startup and implementation. "Support from Fortinet allowed us to create a robust model for smooth implementation," says García.

IPT found remarkable value in Fortinet security solutions' additional functionality, which includes traffic inspection, content filtering, intrusion detection and prevention, and application control. "It is a solution that works very well for us and allows us to scale as we think about adding new products and services to the network tomorrow," remarks García.

"Fortinet helped us find the best solution from a technical and cost-efficient standpoint for the challenges related to security, centralized connectivity, multiple outbound paths, and bandwidths that ensure the proper delivery of 4G mobile service. Our partnership allowed us to standardize the internet signal via low-orbit satellites that we use in our transport links to remote stations in record time. In this way, we have been able to continue growing our 4G coverage to more rural areas of Peru, bringing a high-quality service and thus helping to reduce the digital gap in the country," adds Alessandro Defilippi, CTIO of Internet Para Todos.

## Solution

- FortiGate Next-Generation Firewall

*"We are eager to collaborate with Fortinet to explore future-proof solutions that meet our evolving customer demands, with a particular focus on connecting remote areas of Peru."*

**Manuel García**  
Network Manager  
Internet Para Todos

## Fortinet Supports IPT Growth

The next few years appear bright for IPT. The company aims to expand its connectivity model using low-orbit satellites to a broader range of remote locations, ensuring these sites benefit from Fortinet's robust security solutions. By 2026, IPT envisions all its stations being equipped with satellite connectivity and NGFWs for comprehensive data protection.

Furthermore, IPT is considering expansion into the B2B segment. As part of this growth strategy, IPT plans to migrate its core network management to an in-house implementation to leverage Fortinet's security solutions. "The additional layers of security provided by Fortinet's existing equipment will be instrumental in expanding our product portfolio," states García.

"We are eager to collaborate with Fortinet to explore future-proof solutions that meet our evolving customer demands, with a particular focus on connecting remote areas of Peru," García concludes.



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