# WISP ecosystem analysis

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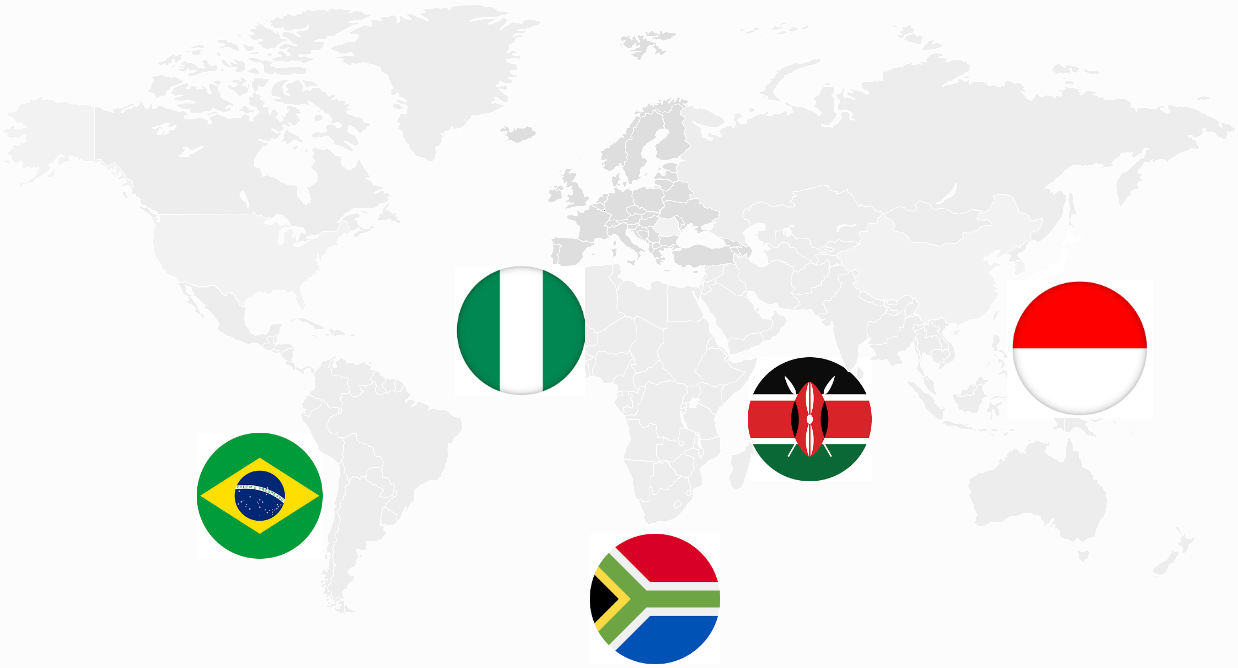
# The WISP Market analysis

# WISP market análisis

DSA/FCDO Partnership



# WISP market status


**Factors considered:**

- Fixed broadband penetration
- Regulation for WISP
- Number of WISP and market share
- Access to funding
- Spectrum use

# The Internet market in Brazil

# Internet market in Brazil

**250 M**
Mobile connections

4G accounts for 76,9 % of the connections share while 5G connections reached 4,3% (10M)

**81%**
Internet users

Although most of Brazil's population are Internet users (81%), the digital divide between urban and rural communities continues to be a challenge.

**44,5 M**
Fixed Connections

70,3 % of connections use fiber as access technology. Wireless technologies accounts for 3,9% (Satellite access accounts for 0,7%)

**90%**
Households

In 2021, Internet was accessible in 90.0% of Brazil's households

In 2021, for the first time, the share of households with fixed broadband subscriptions surpassed those with mobile broadband subscriptions

# Brazil’s WISP market

# Market and business model review

Most WISP business models currently are focused on deploying fiber-to-the-home (FTTH) connections in and around major metropolitan areas. Big WISP are also deploying 5G networks.

**Small and regional providers comprise about 45% of the fixed broadband market.**

Over 19,000 fixed broadband providers, including major mobile operators and ISPs (both via fiber and wireless).

**Interference challenges**

WISP have reported cases of congestion and aggregate interference in their operation. Use outside technical parameters is the most common cause

**Access to fiber backhaul and neutral networks**

Operators report wide offer to access private/neutral fiber networks. Challenges remain in rural areas.

**Wireless to fiber migration**

This trend towards fiber is driven by various factors, such as the population concentration in urban areas and the capacity of fiber to improve offers with minimal investment when compared to wireless solutions

A small ISP (*Prestador de Pequeno Porte (PPP)*), is an ISP that has less than 5,000 subscribers, or less than 5% market share in all markets

# Spectrum framework

Obtaining a spectrum license in Brazil is a straightforward process. PPPs have also obtained 5G spectrum in the last auction.

### Extensive use of unlicensed spectrum

Small ISP and community networks have reported extensive use of the unlicensed bands mostly for Wi-Fi technologies and transport links.

### Use of the 6 GHz band

ANATEL updated its unlicensed spectrum use regulation to allow the use of the full 6 GHz band for license-exempt use. Ongoing work on the conditions for outdoor use.

### Use of unlicensed spectrum will be beneficial for WISPs

Internet providers are complementing their fiber with unlicensed wireless access, providing connectivity to specific markets, such as commercial installations. There is a great interest from WISPs in the evolution of Wi-Fi technologies, including Wi-Fi 6E, although concerns have been raised regarding availability and cost of equipment in Brazil.

# Keys for a WISPs competitive market

Regulation, funding and a clear strategy are key factors to foster the WISP market development.

### Targeted support to WISPs.

Specific regulations, reduced regulatory and administrative burden, participation in state-funded connectivity programs.

Support and training for Community networks.

### Access to fiber networks

*Wholesale agreements.* Large wholesale providers partnering with small ISP to deploy fiber networks.

*Government support to fiber deployments.*

### Access to funding

FUST, FUNTEL, BNDES, and the incentivized debentures by MCOM are funding programs offering funds to WISPs. There are remaining challenges about the capacity to access funds by smaller WISPs

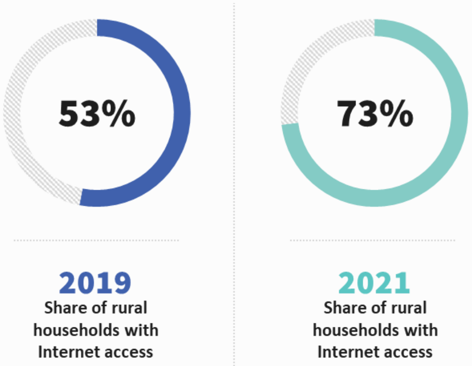
### Industry associations

ABRINT's forward looking agenda will focus on issues such as ANATEL's regulatory simplification efforts, promoting the use of a secondary spectrum market, opportunities to provide mobile services as an MVNO and access to numbering resources, and promoting lessons learned from early 5G deployments

# WISP market challenges

Consolidation trend. In 2021, Desktop acquired eight smaller providers, and in 2022 announced the acquisition of at least eight more companies. Nearly half of its current customer base come from acquisitions.

Internet access in rural areas still lags behind the national average




High cost of interconnection remains as an issue for very small operators.

Costs of cybersecurity management can be an issue for very small ISP.

# Conclusions and recommendations

# Conclusions and recommendations

**Market consolidation can change the landscape leading to the market dominance of WISPs in specific locations**

Review the granularity of the WISP definition. A more granular analysis may support regulatory actions oriented to promote competition specially in rural and remote areas

**There are not targeted programs for very small ISP. Access to funding can be a**

MCOM can make funding available specifically for WISPs to provide connectivity in remote or underserved areas. FUST, FUNTEL and others can make available special programs to advise smaller WISPs on the presentation of projects.

**Operational costs associated with cybersecurity requirements can be a challenge for WISPs**

ANATEL and MCOM can review the cybersecurity requirements and use a similar approach tan with other regulatory requirements for PPPs.

# Thank you!

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