

Advancing affordable connectivity through public Wi-Fi

A Dynamic Spectrum Alliance (DSA) initiative, research delivered
by Access Partnership



About the DSA Public Wi-Fi initiative

A DSA-led, cross-industry research program

Why DSA commissioned this work

To equip policymakers, regulators and development partners with evidence-based insights on the financing, operation and sustainability of inclusive public Wi-Fi networks that complement national broadband goals and support equitable digital inclusion worldwide. Delivered in coordination with the UK Foreign, Commonwealth & Development Office (FCDO), including on the selection of the country deep-dive case studies.

Access Partnership's role

Independent research partner selected through DSA's RFP process. Responsible for the survey, financing analysis and country case studies across the five focus countries, findings presented here are DSA's project outputs.

Why public Wi-Fi matters

Mobile data costs can consume a disproportionate share of low-income household earnings. Public Wi-Fi networks in parks, transport hubs, schools and clinics are a critical tool for extending affordable connectivity to underserved populations, supporting digital public services, and enabling smart-city, tourism and economic-development objectives.

For purposes of the report, public Wi-Fi is defined as “Wi-Fi networks available for public use in public places”. This definition is agnostic as to ownership, operator, governance / business model, location, scale, purpose and on what type of device is being used to connect to the network. It does not preclude Wi-Fi networks that are used primarily for the owner’s internal (private) purposes, as long as it is also public facing and accessible.



A structured mapping across five emerging economies

Deliverables 1 and 2 of the DSA Public Wi-Fi research programme, conducted by Access Partnership.

Five countries, 158 deployments

Brazil (24), Indonesia (55), Kenya (10), Nigeria (31) and South Africa (38), selected for geographic and demographic diversity and relevance to spectrum policy debates.

Four analytical dimensions

Scale and scope; technical architecture and spectrum use; governance arrangements; and documented socio-economic outcomes, covering deployments since January 2015.

Standardised evidence base

Six-sheet workbook per country covering taxonomy, technical architecture, performance, governance, financing and impact, populated from government, operator and academic sources.

Deployment landscape at a glance

158 deployments span citywide, regional, sector-driven and community typologies.

<div>Brazil, 24</div> <div>National Wi-Fi Brasil / GESAC programme plus 20+ municipal networks across state capitals; WiFi Livre SP alone passed 1 billion sessions in 2026.</div> <div></div>	<div>Indonesia, 55</div> <div>Largest count in the database. Anchored by wifi.id (Telkom) and JakWifi; spans Java, Sumatera, Kalimantan, Sulawesi and Papua.</div> <div></div>	<div>Kenya, 10</div> <div>Central-government National Hotspots Programme targeting 25,000 sites by 2027, plus county, airport and conservation-sector deployments.</div> <div></div>
<div>Nigeria, 31</div> <div>Lagos / MainOne parks PPP, FAAN+MTN airport Wi-Fi, USPF rural broadband, and university-campus networks.</div> <div></div>	<div>South Africa, 38</div> <div>Broadest range of models: SA Connect, Project Isizwe, TooMuchWiFi, Ikeja, Zenzeleni, and 24 municipal networks.</div> <div></div>	<div>Cross-cutting view</div> <div>No single governance or financing model dominates. Fibre is the primary urban backhaul; satellite and hybrid solutions serve rural areas.</div> <div></div>

Technical architecture and spectrum: what we found

A snapshot of the installed base, and where the next upgrade cycle is heading.

Wi-Fi 5 dominates the installed base

79 of 108 entries specifying a standard run Wi-Fi 5 (802.11ac); 19 Wi-Fi 6; small but growing presence of Wi-Fi 6E and Wi-Fi 7. Fibre is the primary urban backhaul; satellite and hybrid wireless cover rural and peri-urban sites.

6 GHz is the next unlock

All five countries have either opened the lower 6 GHz band or issued draft rules. Utilisation to date has been limited, but the band supports future Wi-Fi programmes, network build-outs and equipment-replacement cycles.

Operational constraints remain

Indoor-only restrictions on 5.1 GHz persist in some markets; Dynamic Frequency Selection requirements in 5.2 GHz and 5.4 GHz can affect user experience in dense deployments.

Governance models span the full spectrum

No single model dominates across the five countries; delivery is primarily a local-government function.

Government-led

Centralised national and sub-national programmes (Wi-Fi Brasil, SA Connect, Kenya National Hotspots). Clearest mandate; most exposed to political and budget cycles.

Public-private partnership

Second most common model (49 deployments). Private partner funds build or operation in exchange for advertising, data or CSR value, e.g. JakWifi, Lagos/MainOne.

Operator-led

Commercial concession recovered through subscriptions, vouchers or wholesale (wifi.id, Ikeja, Poa!). Works where an operator captures the benefit internally.

Community cooperative

Donor- or grant-seeded networks run by local organisations (Zenzeleni, TandaNET). Low cost; high dependency on grant cycle.

Six financing archetypes, durable networks blend at least two

Deliverable 2 identified six distinct funding models across the 158 deployments.

Public budget Dominant model across the five countries. Most exposed to annual appropriations, political cycles and fiscal reprioritisation.	Universal Service Fund More insulated from annual budget discretion (Kenya National Hotspots, Nigeria USPF, SA Connect Phase 2), but needs disbursement accountability.	Public-private partnership Second most common (49 deployments). Removes CAPEX from public accounts; dependency lapses when the partner's commercial benefit does.
Operator-led commercial Sustainable where the operator captures the benefit internally, wifi.id (Telkom Indonesia), Ikeja Wireless, Poa! Internet.	Advertising-supported Red Cheetah (Nigeria), ThinkWifi (South Africa), Floripa Wi-Fi Livre (Brazil). Viable only where audience density supports advertiser demand.	Donor or seed funding Zenzeleni (South Africa), TandaNET (Kenya). Right fit for community networks but rarely has a defined path beyond the grant.

Operating cost, not capital, is what makes or breaks a network

The dominant risk sits on the recurring line, and recurring cost is almost never disclosed.

CAPEX varies by four orders of magnitude

From under US\$ 5,000 for TandaNET (Kenya) to over US\$ 116 million for Kenya's National Hotspots Programme. Per-point urban installation runs US\$ 1,000–4,000 (Brazil); rural solar-powered sites up to US\$ 10,000. South Africa is the only country with verified CAPEX across multiple programmes.

OPEX is where networks fail quietly

Programa Wi-Fi Brasil runs at R\$ 150 million / year (satellite is the main driver). A 2021 NCC audit found ~30% of USPF-funded Nigerian sites non-operational, capital was financed, operations were not. All 55 Indonesian deployments record OPEX as 'not disclosed'.

Takeaway Recurring cost should be documented, committed and reported before capital expenditure is approved.

Documented outcomes: public Wi-Fi delivers when it is embedded

The strongest results come where public Wi-Fi is tied to services and local anchors, not deployed in isolation.

Brazil: scale and inclusion

WiFi Livre SP passed 1 billion accesses in 2026 across 7,923 hotspots (3,200 in favelas); Wi-Fi Brasil connected 9,700+ schools; Pix payments by informal vendors at Recife and Campo Grande.

Indonesia: emergency role

JakWifi (1,263 access points, Jakarta) was the most-cited emergency infrastructure during COVID-19, sustaining online learning and work-from-home across low-income neighbourhoods; wifi.id operates at national scale.

Kenya: digital government

National Free Wi-Fi helped lift government revenue collection from KES 60M to KES 700M–1B per day. Jitume Digital Hubs: 143 hubs, 41,841 users and 13,153 trained beneficiaries by May 2026.

Nigeria: mixed delivery

USPF Federal Programme reached 35 of 63 planned sites by end-2024 (₦24.2bn committed). Google Station and Meta Express Wi-Fi wound down, a lesson in corporate-subsidy fragility.

South Africa: policy at scale

SA Connect Phase 2 (2023–26) targets 32,000+ community hotspots and 5.5M rural households. Project Isizwe and Zenzeleni show community and township models that extend reach beyond state rollout.

Reporting gap (cross-cutting)

KPI discipline is uneven. Many programmes publish launch figures but little on operational performance, user cost, or lessons learned, limiting replication and multi-year financing.

Deep-dive case studies: one flagship programme per country

The next phase of the project zooms in on one representative deployment in each market.

<div>Brazil</div> <div>Ceará Conectado: state-level programme in the Northeast, combining fibre backbone and public access points.</div> <div></div>	<div>Indonesia</div> <div>wifi.id: Telkom Indonesia's national freemium platform; the country's largest de facto municipal Wi-Fi system.</div> <div></div>	<div>Kenya</div> <div>National Free Public Wi-Fi Hotspots Programme: 25,000 hotspots targeted by 2027, funded through the Universal Service Fund.</div> <div></div>
<div>Nigeria</div> <div>Osun State - Imole Wi-Fi Initiative: state-level deployment with a confirmed US\$ 300,000 CAPEX</div> <div></div>	<div>South Africa</div> <div>SA Connect Phase 2 (2023–2026): national programme targeting 32,000+ community hotspots and 5.5M rural households.</div> <div></div>	<div>What the deep dives will add</div> <div>Governance, financing, technical architecture and user outcomes in enough depth to be replicated, turning the mapping into a replication playbook.</div> <div></div>

Key challenges: structural, not just administrative

Three constraints appear repeatedly across the five countries.

Wholesale connectivity sets the OPEX floor

Public Wi-Fi buys bandwidth from the same mobile operators that compete for its users. The wholesale market structure sets a cost floor that no sponsor controls.

Fragmented governance and no central registry

Information is siloed by level of government and deploying entity. In Indonesia, 45 of 55 deployments run on annual APBD cycles, with no national registry of public Wi-Fi programmes.

Opacity blocks multi-year financing

Treasuries, lenders and private partners will not commit funds beyond the current budget year against figures they cannot verify. Opacity on recurring cost removes the multi-year instruments that would give these programmes continuity.

What this means for policy and programme design

Lessons that translate directly into procurement, funding and oversight requirements.

1

Diversify revenue

Durable networks combine at least two funding sources. Public budget alone is the most exposed to political and fiscal cycles.

2

Fund operations, not just build

Make a documented operating plan, disclosure condition and OPEX reserve a condition of capital award.

3

Keep procurement forward-looking

Technology-neutral, but signal forward-looking standards (Wi-Fi 6 / 6E / 7) and open the lower 6 GHz band for Wi-Fi use.

4

Share what works

Collect and disseminate deployment lessons across jurisdictions, the current information gap is the single clearest barrier to replication.

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Our dedicated experts, located around the world, are here to help.

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