

Spectrum Management

AFFORDABILITY REPORT 2020 THEMATIC BRIEF



Although invisible to the human eye and therefore unnoticed by most consumers, electromagnetic spectrum can be a substantial operating expense for mobile network operators – and a prohibitive barrier for smaller and alternative operators. ‘Spectrum’ refers to the waves that carry data signals between two pieces of internet-capable devices: for example, a smartphone and a mobile cell tower. How governments manage their spectrum can have enormous consequences for its telecommunications market.

We analyse **spectrum management** through two primary aspects: availability and allocation. The availability of spectrum for mobile telephony has a direct impact on the capacity of network operators to provide mobile broadband services to consumers. With only limited spectral availability (defined as the number of frequencies available to a network operator to use) or overly-narrow permissions (for example, spectrum permissions that allow a network operator to provide 3G but not 4G broadband services), operators may struggle to meet market demand as more and more people connect to the internet through mobile telephony. The allocation of spectrum can be done in a multitude of ways, with different consequences: first-come-first-serve strategies typically favour incumbent operators, while public auctions add transparency to the market – when fairly conducted.

Tanzania

↑ With [industry consultation](#), the regulator [successfully held a 2018 auction on the 700MHz range](#) that includes clear targets for expanded coverage by 2024.

Argentina

↑ Argentina helps to bridge the country's digital divide by [establishing licenses for community networks](#) in rural, remote, and other vulnerable areas.

Thailand

↑ The regulator implemented [new criteria to facilitate spectrum refarming](#) in 2018 – and put the regulations to use one year later to reallocate bands.

Madagascar

↓ With a [first-come-first-serve strategy for spectrum allocation](#), incumbent operators have taken up to hoarding large tranches of spectrum, leaving it underutilised and crowding out potential competitors.

Haiti

↓ [High licensing fees for the late 4G/LTE switchover](#) in Haiti derailed industry plans for deployment of the new technology and deferred a better quality of service for consumers.

Laos

↓ Although [laws exist to enable spectrum auctions](#), the regulator has so far refrained from the competitive award of spectrum.

Unseen, and expensive? Spectrum costs can have a big impact on how people connect to the internet and how much they'll pay.

On average, spectrum policy improved across all three regions and for countries in all income groups: the trend was especially robust across Africa. In South Africa, where spectrum management has been mired in legal battles, the regulator took steps to release more spectrum in the context of the Covid-19 pandemic and support greater unlicensed use of spectrum. In the Democratic Republic of the Congo, a new Telecommunications Act also [enabled the offering of LTE licenses](#) to network operators, and the [2019 national broadband plan](#) set clear targets for making more spectrum available through auctions.

POLICY LEADERBOARD		(/10)
1st	Malaysia	9.0
2nd	Thailand	8.5
3rd	Costa Rica	8.0
4th	Peru	8.0
5th	Mexico	8.0
6th	Argentina	7.8
7th	Colombia	7.5

A number of countries also demonstrated new best practices across the globe. [Thailand's refarming scheme](#), and the regular transparency from the Malaysian regulator on spectrum planning, offer world-class models for peer countries. Policy leaders, like Mexico and Argentina, also made [clear policy steps to enable community networking](#) with clearer routes to spectrum authorisations.

Spectrum management remains a barrier to affordability in countries like the Philippines, where [a lack of transparency](#) creates distrust across the sector on when, how, and how much spectrum is awarded. [Spectrum hoarding is consequently common](#) among the incumbent operators: such behaviours make it harder for new entrants to come into the market. This has negative consequences for consumers and the price they pay for mobile broadband services.

A4AI's Policy Recommendations —

- 1 Treat spectrum like a public good, with fair reserve prices and a pro-competition strategy to support a diverse and healthy market.
- 2 Govern spectrum on transparent terms, with clear plans on making spectrum available over time and through transparent procedures, such as auctions.
- 3 Make spectrum available for complementary service providers, e.g., community networks and rural operators, through innovative strategies such as social licensing and unlicensed use.