

6 GHz in LATAM

Mobile evolution in 6.425-7.125 GHz



Regulators all over the world are considering how best to manage spectrum in the 5.925–7.125 GHz frequency range. Following the conclusion of the World Radiocommunication Conference 2023 (WRC-23), countries representing 60% of the global population sought inclusion in the identification of the band for licensed mobile, including Brazil and Mexico in LATAM. This footprint is expected to grow to 80% of the global population.

This range is coveted by both mobile and Wi-Fi and regulators are defining additional 6 GHz spectrum to these technologies based on their understanding of which requires access to more spectrum. The 6 GHz band represents the largest remaining single block of mid-band spectrum that can be assigned to licensed mobile or unlicensed Wi-Fi.



MID-BANDS AND MOBILE DATA OVERVIEW

Data demand is rising

In the future, 6G will use 200-400 MHz channels

Mid-bands are indoor and outdoor

Digital development needs macro-cell full-power 6 GHz

In LATAM, data per connection will triple between 2024 and 2030 as 5G accelerates

2024 → **9 GB/month/connection** to
2030 → **31 GB/month/connection (3.5x)**



Peak 6 GHz trial speeds:

12 Gbps

IN CITIES STUDIED IN LATAM:


The average economic benefit of **FULL-POWER LICENSED MOBILE IN UPPER 6 GHz** is


7x 
GREATER THAN UNLICENSED

58% 
of mobile data use is indoors and

 **42%**
is outdoors

84% of indoor connectivity is provided by mid-bands with


 **16%** coming from low bands

71% 
of urban indoor 5G use is provided by 3.5 GHz

Wi-Fi use:

41% **52%** **7%**
Wi-Fi 4 Wi-Fi 5 Wi-Fi 6


Technology migration will enhance efficiency

 Mid-band 4G download speeds are **3x** higher than on low-bands

3.5 GHz 5G download speeds are **7x** times higher than low bands and



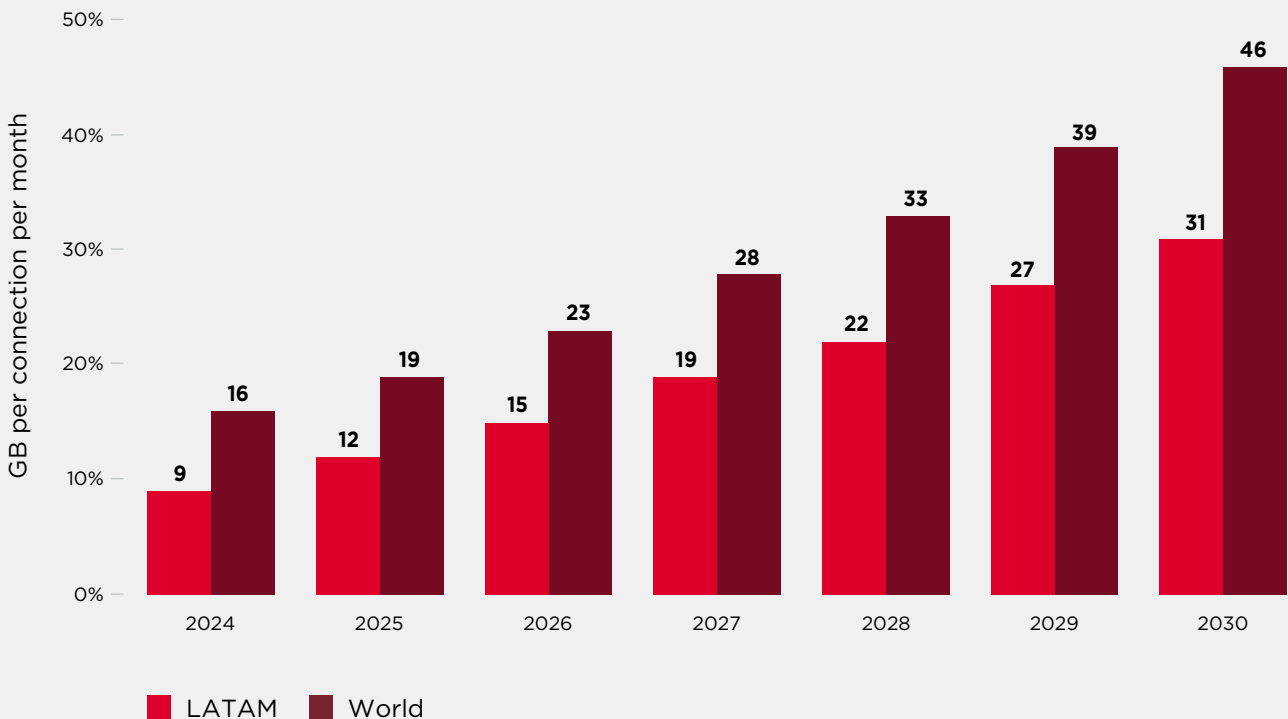
2.5x higher than lower mid-bands

Data growth

Mobile and fixed operators will need to manage significant traffic growth on their networks over the next decade. Global mobile traffic growth in 2023 was the largest of any year to date. The 2023 increase alone was greater than the absolute traffic level in 2018. Looking ahead, average data use is expected to be 3.5x higher in 2030 than in 2024 in LATAM. The absolute increases in network

traffic will continue to grow at higher numbers each year, despite the percentage growth reducing – it is important for regulators and policymakers to understand that while mobile data use cannot continue to increase exponentially, the volume growth each year is getting larger. Additional mobile spectrum such as the full upper 6 GHz can support this growth in LATAM.

Figure 1
LATAM's mobile data usage



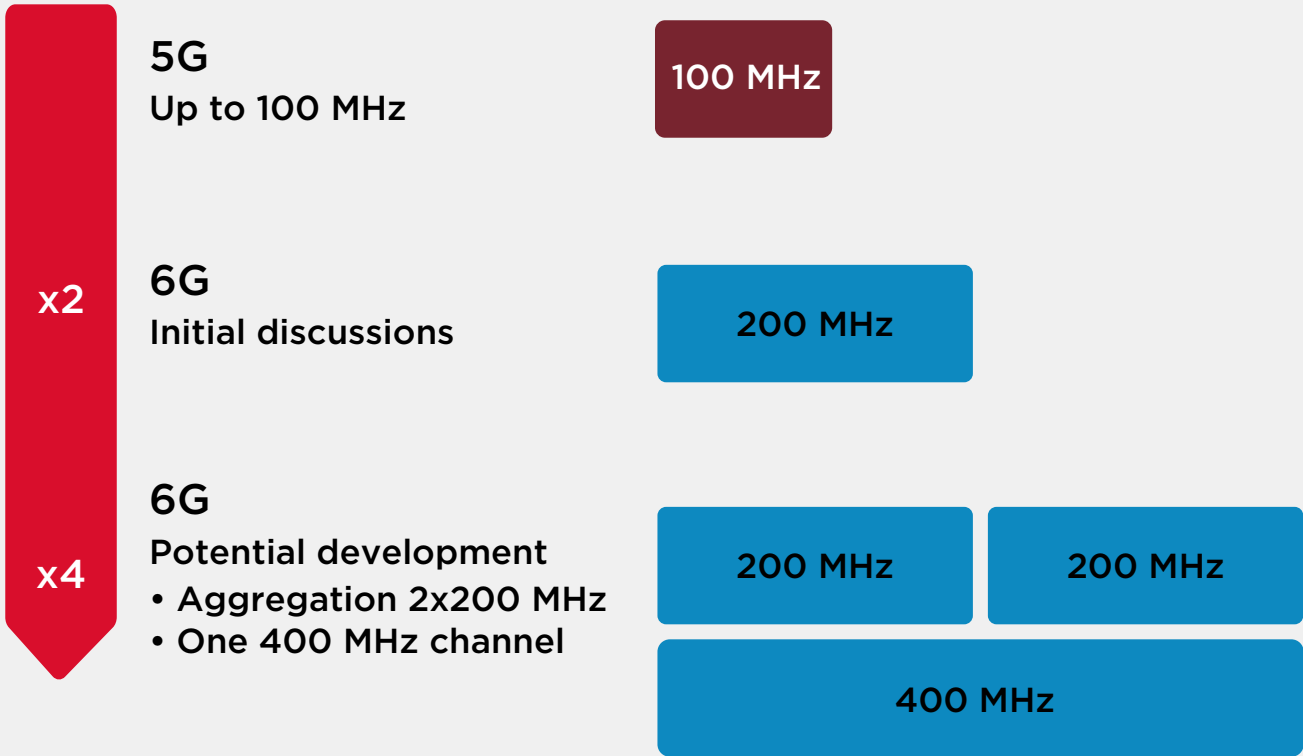
Source: GSMAi

Planning 6 GHz for the future

Each mobile generation has used wider channel sizes than the one before, from 1.25 MHz 2G channels to the 100 MHz channels used for 5G. The new 6G era in the 2030s will use 200-400 MHz channels to cater for capacity and speeds required to deliver 6G-era services and applications.

6 GHz will be able to provide some of this capacity. The 700 MHz available in the upper 6 GHz band can only provide the smaller end of the 200-400 MHz channel size range in a three-operator market but is still the most likely way of supporting sufficient channel sizes in LATAM.

Figure 2
New channel sizes for new generations



Socio-economic benefits

In 2024, GSMAi studied the potential economic benefits of three different policy options for the upper 6 GHz band in nine countries around the world.

- licensed mobile use (Scenario 1)
- unlicensed RLAN use (Scenario 2)
- enabling shared use by reducing the power levels of mobile deployments (Scenario 3).

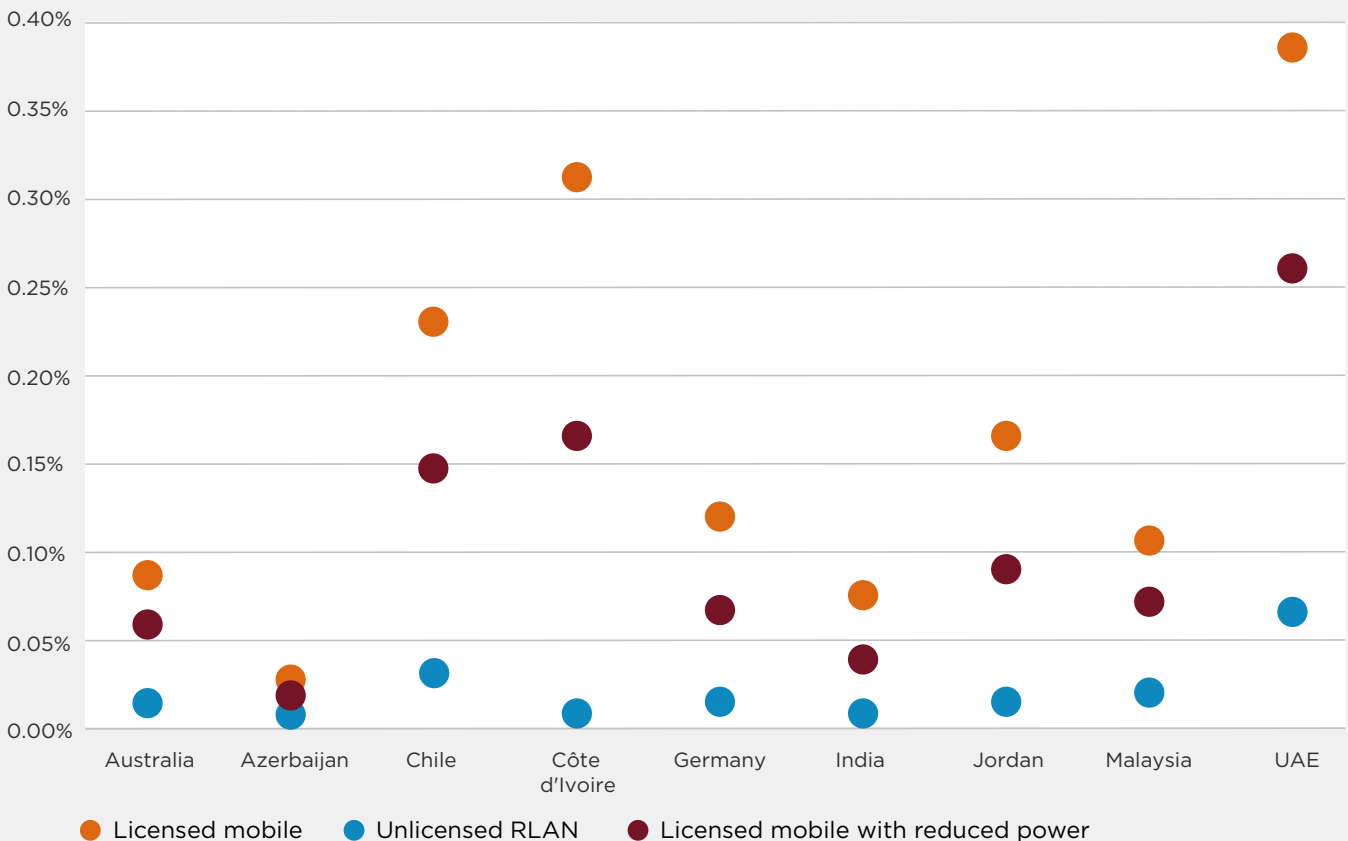
The greatest economic benefit was always achieved with Scenario 1, where the upper 6 GHz band is assigned to licensed, macro-cell mobile use with standard power levels. This is because mobile networks are more likely than Wi-Fi to face capacity

constraints through to 2035, making additional spectrum critical for enhancing network performance and broader economic value.

As shown below, there is scope for more efficient use of Wi-Fi spectrum by deployment of newer Wi-Fi technologies. With more efficient spectrum use, existing unlicensed bands (2.4 GHz, 5 GHz, and lower 6 GHz) are sufficient to handle future Wi-Fi demand.

Shared use approaches that limit power substantially reduce capacity and benefits, while indoor/outdoor usage distinctions lack justification given most mobile traffic originates indoors.

Figure 3
Economic benefits of the three scenarios in nine countries
Proportion of expected GDP in 2035



Source: GSMA Intelligence

Note: The results represent the net present value (NPV) of economic benefits over 2023-2035, expressed as a proportion of expected GDP in 2035 for each country.

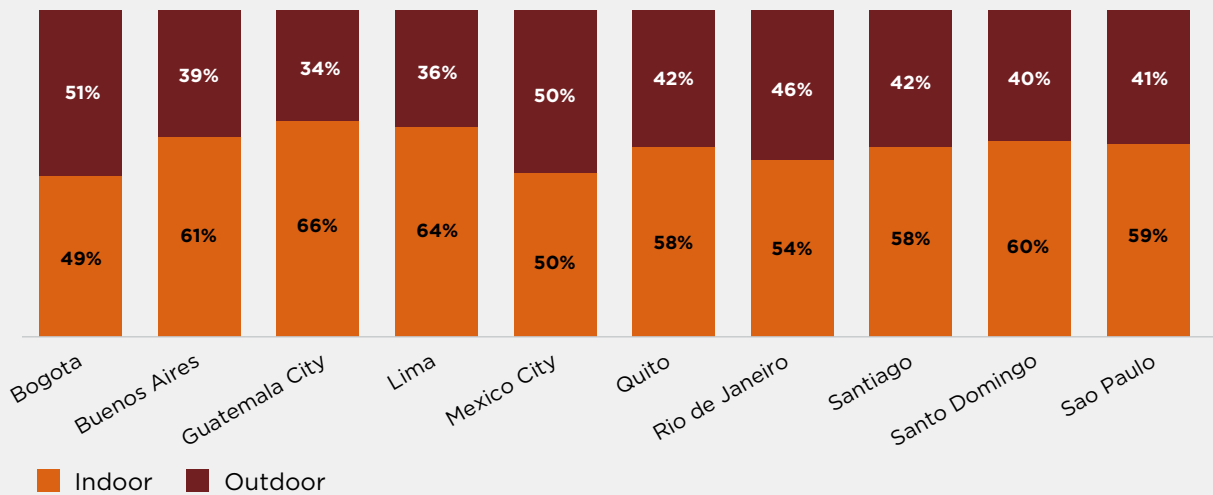
Indoor-outdoor mobile usage

Data from SpeedTest Intelligence (provided by Ookla), shows that most mobile use is indoors and largely delivered over mid-band spectrum.

Evidence also suggests the upper 6 GHz band can effectively provide an additional capacity layer in urban areas and meet the majority of indoor and outdoor requirements.

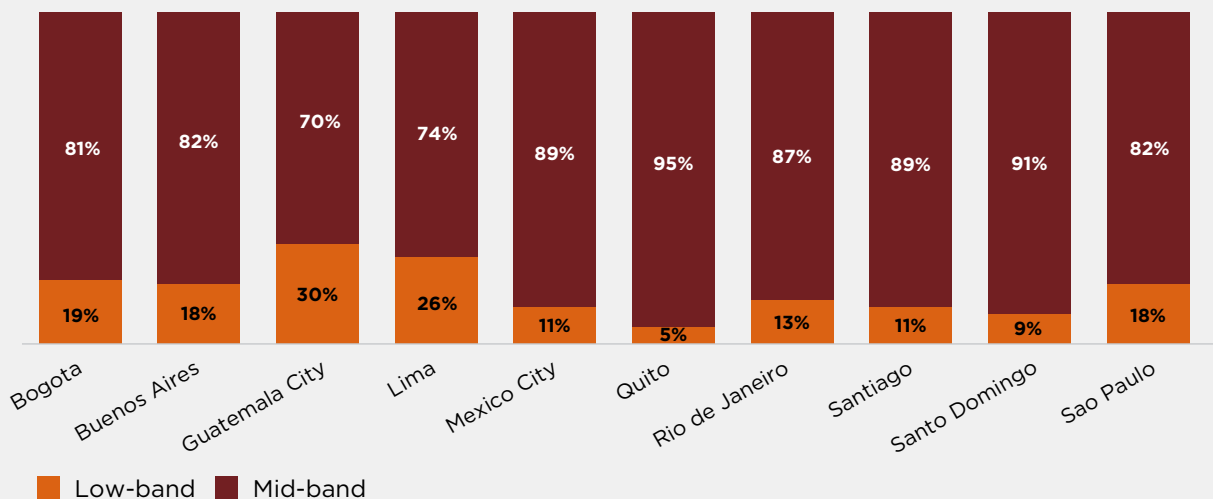
Trials have shown that 6 GHz can deliver comparable indoor coverage to the 3.5 GHz range.

Figure 4
Distribution of mobile scans based on indoor/outdoor locations



Source: GSMA Intelligence analysis, based on Speedtest Intelligence data provided by Ookla

Figure 5
Distribution of 4G and 5G indoor scans by spectrum band



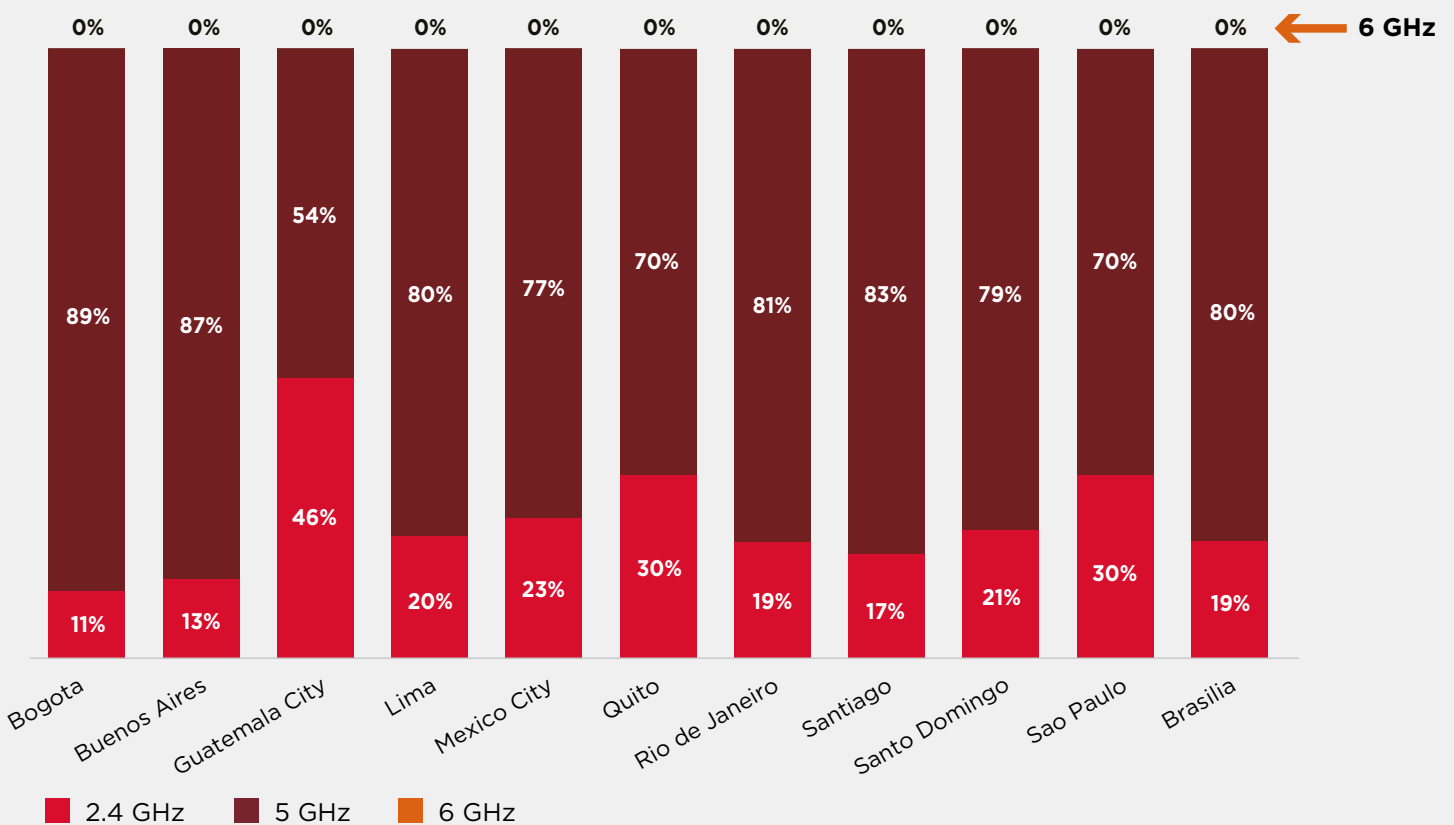
Source: GSMA Intelligence analysis, based on Speedtest Intelligence data provided by Ookla

LATAM: clear pathway for Wi-Fi evolution in lower 6 GHz

Data gathered by Ookla across LATAM during 2024 and 2025 in 11 cities shows that all countries have almost no connections in the lower 6 GHz band using Wi-Fi 6E. Spectrum in the 2.4 GHz and 5 GHz Wi-Fi

ranges is carrying the majority of today's LATAM Wi-Fi traffic, leaving the band 5.925-6.425 GHz open to the future evolution of Wi-Fi technology.

Figure 6
Distribution of Wi-Fi 6/6E scans by band



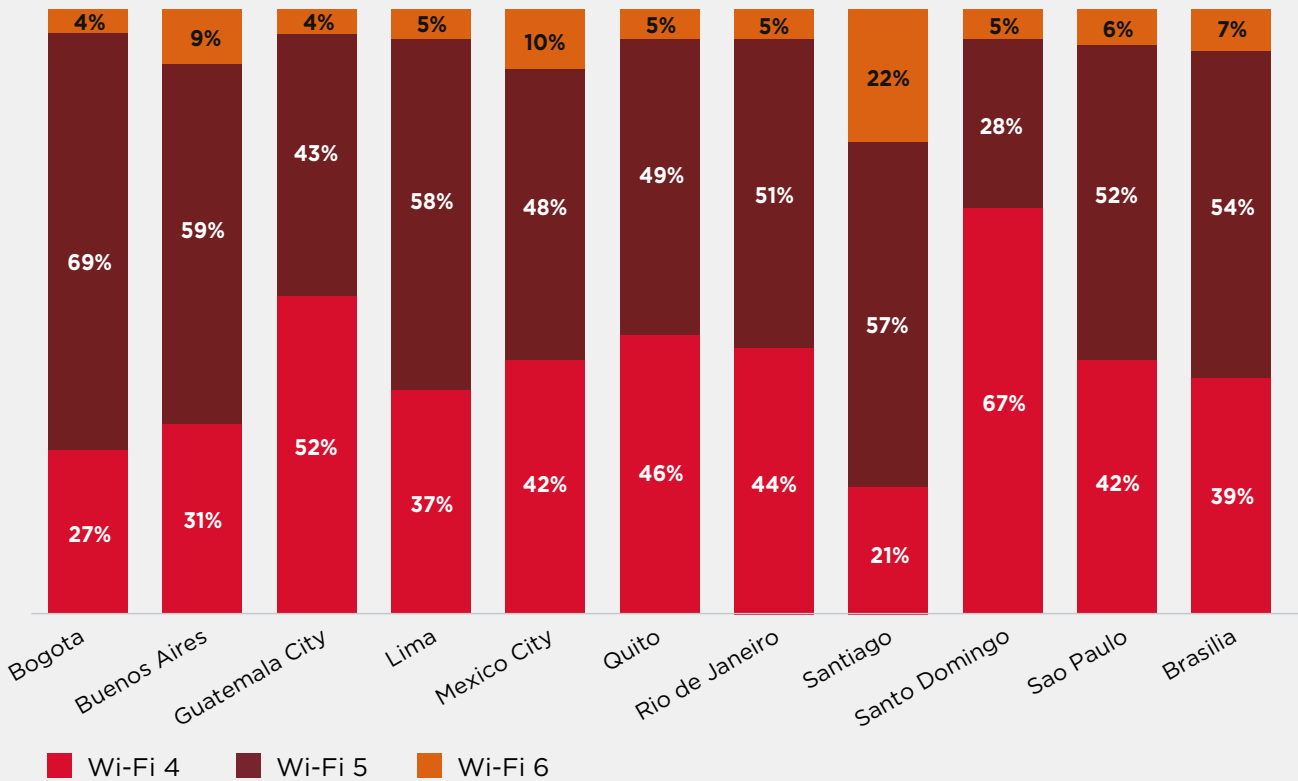
Source: GSMA Intelligence analysis, based on Speedtest Intelligence data provided by Ookla

Distribution of Wi-Fi scans by technology

Today, LATAM relies on older Wi-Fi technologies, especially as 21-57% of scans indicate that Wi-Fi 4 is still being used. 43-57% of Wi-Fi usage was on Wi-Fi 5 with only 4-22% using the more spectrally efficient Wi-Fi 6 technology.

Upgrading to the latest Wi-Fi 6 technology allows for greater efficiency, while optimising indoor deployments (for example, with additional access points, mesh network solutions and using Wi-Fi boosters) can also improve Wi-Fi quality.

Figure 7
Distribution of Wi-Fi scans by technology



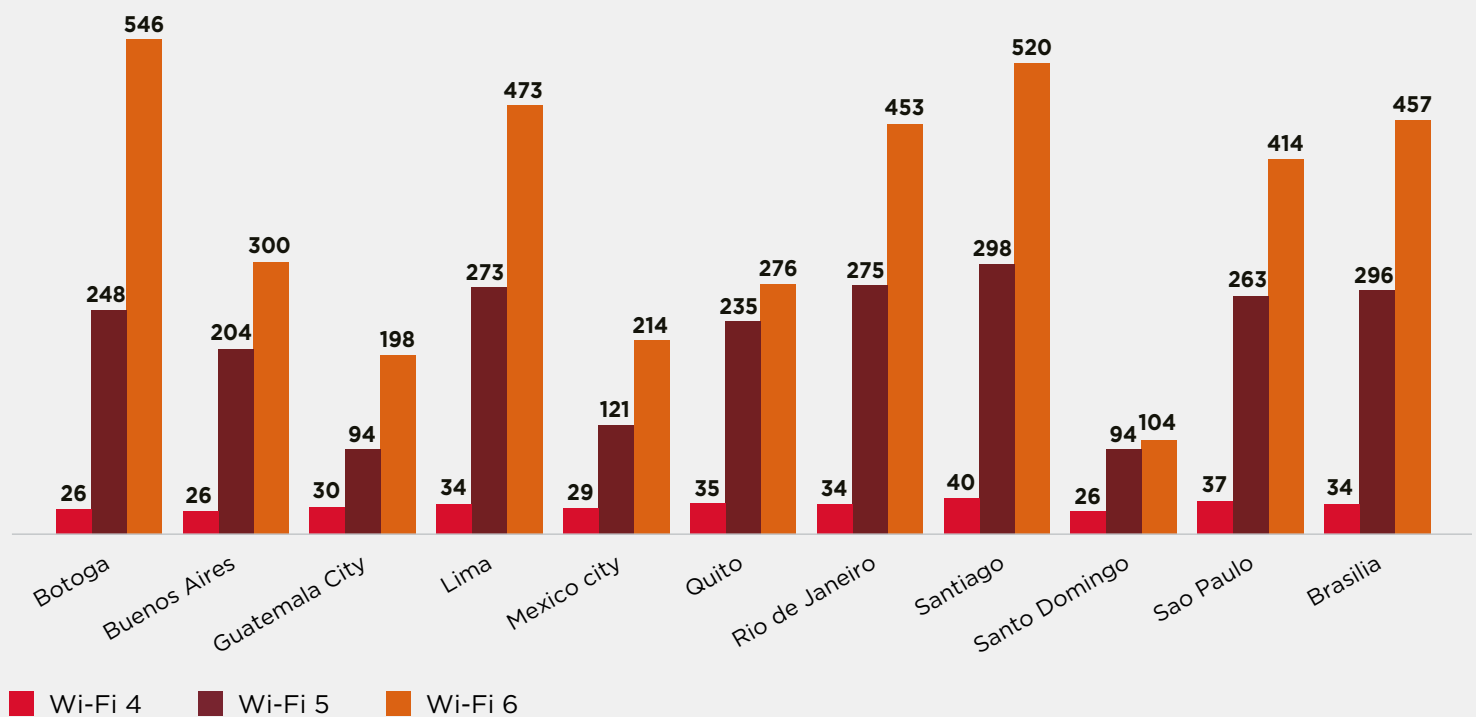
Source: GSMA Intelligence analysis, based on Speedtest Intelligence data provided by Ookla

Median Wi-Fi download speeds by technology (Mbps)

Recent data also highlights the impact newer Wi-Fi technologies can have on delivering faster speeds using existing spectrum bands. While the lower 6 GHz band (5.925-6.425 GHz) is a new expansion

band for Wi-Fi to evolve into, Wi-Fi 6 today is providing fast user experiences using largely 2.4 GHz and 5 GHz spectrum.

Figure 8
Median Wi-Fi download speeds by technology (Mbps) in 11 LATAM cities



Source: GSMA Intelligence analysis, based on Speedtest Intelligence data provided by Ookla

Conclusion

Licensed 6 GHz spectrum can ensure that mobile connectivity will support LATAM's digital goals going into the 2030s. The spectrum capacity in the lower 6 GHz band is available for Wi-Fi evolution in LATAM.

It is now time to ensure that mobile is given the same potential with fair and balanced regulation that allows licensed mobile access to the full upper 6 GHz band at 6.425-7.125 GHz.

6 GHz highlights

- Licensed 6 GHz capacity is required to support increasing customer demand at speeds outlined in the International Telecommunication Union's vision for 5G. It will also be required for 6G.
- Spectrum capacity needs for future deployments should consider channel sizes of 200-400 MHz.
- Mobile networks are already densified, but 6 GHz can enable the growth of sustainable mobile capacity on existing macro-cell sites.
- Timely availability of 6 GHz, at reasonable conditions and price, will drive cost-efficient network deployment, help lower the broadband usage gap and support digital inclusion.
- There is scope to improve the efficiency of unlicensed Wi-Fi spectrum use, with upgrades from Wi-Fi 4 and Wi-Fi 5 to the latest technologies and the lower 6 GHz band is an almost entirely unused space in which Wi-Fi can evolve.
- The full upper 6 GHz (6425-7125 MHz) should be made available to full-power macrocell IMT, without any additional power restrictions or sharing mechanisms.