

Balanced spectrum pricing for Vietnam's 5G future



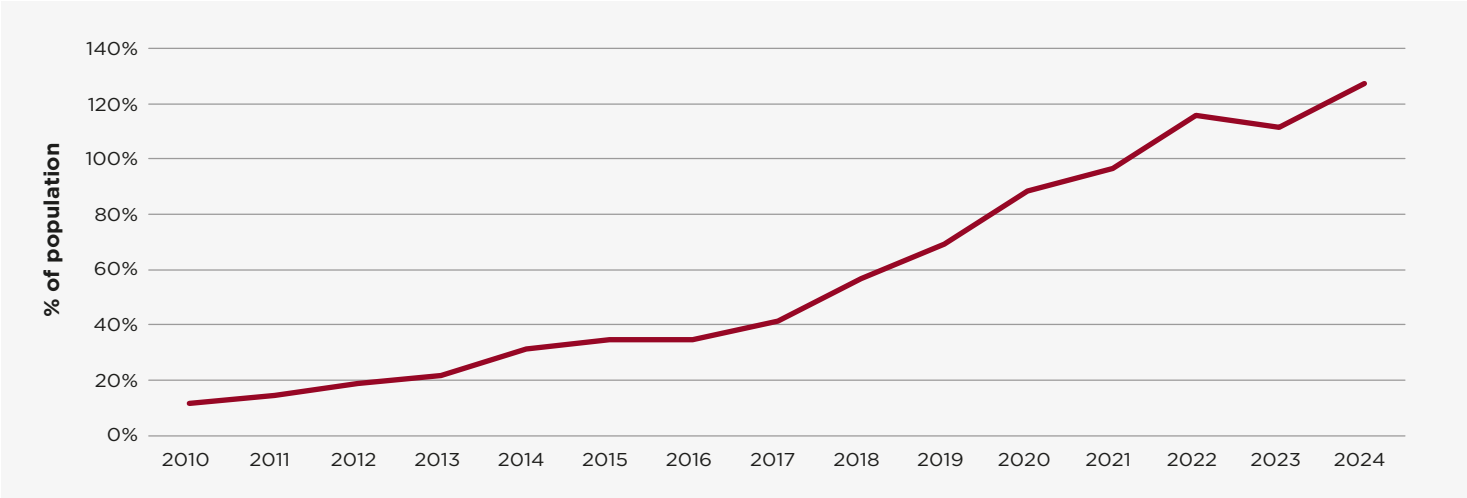
In the past decade, Vietnam has experienced remarkable economic growth, transforming into one of the fastest-growing economies in Southeast Asia, driven by a combination of robust manufacturing, increasing foreign direct investment, and a youthful, tech-savvy workforce. At the same time, the government has actively promoted digital transformation initiatives, leading to the emergence of a vibrant startup ecosystem and increased adoption of e-commerce and fintech solutions.

The long wait for new mobile spectrum

Additional spectrum is central to expanding and upgrading mobile broadband speeds and coverage in Vietnam. The report examines how the country can implement effective spectrum policies, build on its current momentum, and get the most out of 5G.

Connectivity has also seen a remarkable growth in Vietnam - mobile broadband penetration as of Q2 2024 reached 120.5%, compared to just 11.5% in 2010. Over the 2019-2024 period, mobile data usage has increased more than five-fold from 1.8 GB to 9.2 GB per month.¹

Figure 1:
Mobile broadband penetration



Source: GSMA Intelligence.

Figure 2:
Mobile traffic per connection (MB per month)



Source: GSMA Intelligence.

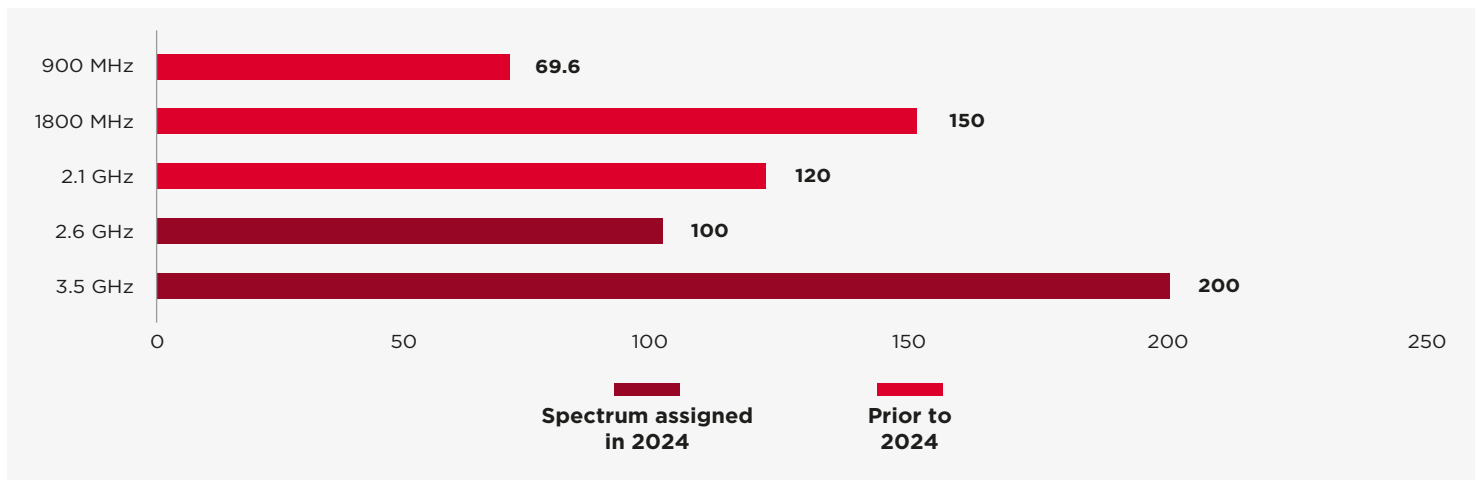
¹ Source: GSMA Intelligence.

Despite rapid adoption and increased usage, mobile spectrum supply has remained constant for over a decade. Before the 2024 auction, the five mobile operators in Vietnam² had access to just 340 MHz of spectrum in the 900 MHz, 1800 MHz and 2.1 GHz bands, which were assigned before 2010.

For most markets globally, the assignment of mid-band spectrum was the starting point for 5G, with 3.5 GHz as the most common launch band. Large, contiguous

amounts of mid-band spectrum are crucial for high-capacity, city-wide 5G. On average, mobile networks will need 2 GHz of mid-band spectrum per country by 2030. At the start of 2024, only 270 MHz of mid-band spectrum was available in Vietnam, compared to around 600 MHz or more in other Asia-Pacific countries. The success of the 2.6 GHz and 3.5 GHz auctions was a timely and much-needed boost to Vietnam's mobile industry.

Figure 3:
Spectrum assigned to MNOs



Source: GSMA Intelligence.

Unsold 2.3 GHz spectrum

To support mobile growth, the Ministry of Information and Communication (MIC) and the Authority of Radio Frequency Management (ARFM) have been planning to release new spectrum for many years. Several key bands were identified to support 5G, including 700 MHz, 2.3 GHz, 2.6 GHz, 3.5 GHz and 26 GHz.³ Unlike in the past, when spectrum was assigned directly to mobile operators, the new bands would be assigned by auction.

One key challenge was pricing, as there were no prior benchmarks for the market value of mobile spectrum in Vietnam. The 2.3 GHz band was designated as the first band to be auctioned, with the aim of establishing a local benchmark. The auction details were announced in February 2023, with three lots of 30 MHz in 2.3-2.39 GHz on offer at a reserve price of VND 5,799 billion (USD 238 million) per lot. The licence duration was 15 years, with strict conditions for 4G and 5G deployment and service quality requirements.

There were several challenges with the auction approach:

- 1 Making available only 90 MHz when there is strong market demand for more IMT spectrum created artificial scarcity as other core bands were also available for assignment
- 2 The 30 MHz channels are sub-optimal for 5G deployment, risking fragmented holdings, which could increase capex for operators and lead to future spectrum management challenges in reorganising the band
- 3 High reserve prices based on a small sample of auctions in the 2.3 GHz band, leaving little room for the price discovery mechanism of the auction.

The three 2.3 GHz lots were auctioned in sequence in May-June 2023. Although the operators had qualified to participate in the auction, no bids were submitted, and all three lots went unsold.

² Three major MNOs – Viettel, VNPT and Mobifone – and two small operators – Vietnamobile and Gtel.

³ X-ref to new Vietnam spectrum roadmap report.

Balanced pricing approach for 2.6 GHz and 3.5 GHz auctions

Following the failure of the 2.3 GHz auction, the ARFM adopted a more considered approach to the next auction involving the 2.6 GHz and 3.5 GHz bands. It was announced that 300 MHz across the two bands (100 MHz in 2.5-2.6 GHz, 200 MHz in 3.7-3.9 GHz) would be made available for auction, and there was a plan to expand the supply of 3.5 GHz spectrum at a later stage.

Significantly, the ARFM carried out a comprehensive benchmarking exercise, covering data points on auction outcomes involving 2.6 GHz and 3.5 GHz for all markets over the last 10 years. This ensured that a much larger sample size was available which provided reliable international benchmark prices for the two bands. Furthermore, in deciding on the appropriate reserve prices, the ARFM took a conservative approach by setting prices at low but non-trivial levels to avoid the risk of the spectrum remaining unsold.

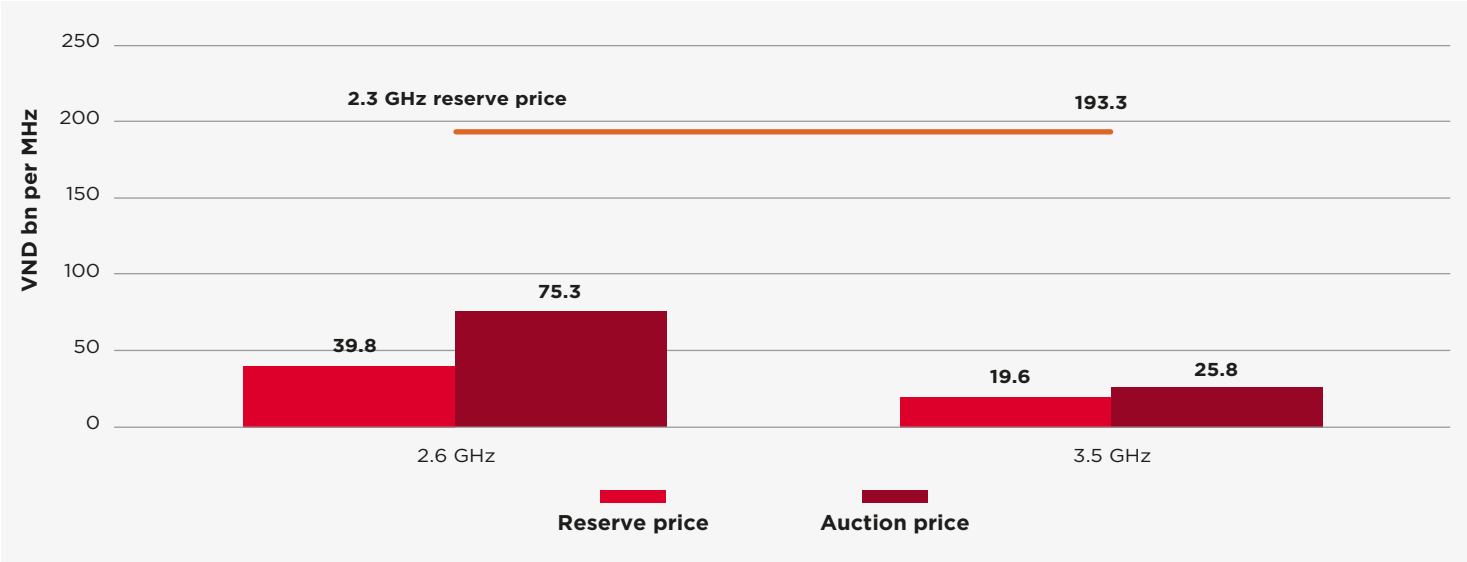
The auction featured three 100 MHz lots with reserve prices of VND 3,983 billion (USD 163 million) for the 2.6 GHz lot and VND 1,957 billion (USD 80 million) for each of the two 3.5 GHz lots. On a per MHz basis, these represented a reduction of 80% and 90%, respectively, compared to the reserve price for the

2.3 GHz band. This provided sufficient scope for price discovery through the bidding mechanism. The licences were valid for 15 years, and winning bidders were required to launch 5G services within a year and deploy a minimum of 3,000 5G base stations within 2 years.

The 2.6 GHz lot was the first to be auctioned in March 2024 and attracted strong interest from the three major operators. Viettel acquired the 100 MHz lot for VND 7,533 billion (USD 309 million). VNPT then acquired the first of the two 3.5 GHz lots for VND 2,582 billion (USD 106 million). The auction for the second 3.5 GHz lot was initially postponed due to a lack of registered bidders but was completed in July 2024, with Mobifone securing it at the same price paid by VNPT.

The successful conclusion of the 2.6 GHz and 3.5 GHz auctions resulted from the ARFM’s balanced approach to pricing and licensing conditions. The final prices for 2.6 GHz and 3.5 GHz were significantly below the reserve price in the unsuccessful 2.3 GHz auction, justifying the ARFM’s pricing decisions and highlighting the importance of modest reserve prices in ensuring efficient spectrum assignments.

Figure 3: Comparison of 2023 and 2024 pricing





Sustainable pricing provides foundation for Vietnam's digital economy

The Vietnam government has set ambitious targets to further develop its digital transformation through ICT and mobile-enabled innovation. These include 100% smartphone penetration for the adult population, average download speeds of 40 Mbps for 4G and 100 Mbps for 5G by 2025, and 99% 5G coverage in Vietnam by 2030.

The successful assignment of 2.6 GHz and 3.5 GHz represents an important first step towards these targets. Still, more work is needed to ensure adequate spectrum supply to support 5G development as adoption grows and the range of use cases expands. A clear spectrum roadmap is critical for operators to prepare investment plans, secure financing and develop arrangements for deploying particular technologies.

Therefore, it is positive that the ARFM is planning to make available more IMT bands, including 700 MHz, 2.3 GHz, additional 3.5 GHz and 26 GHz, in addition to renewing current assignments of 900 MHz, 1800 MHz and 2.1 GHz spectrum.⁴

Building on the recent success, it is now imperative that policymakers avoid measures that artificially increase the cost of spectrum and take steps that enable a fall in spectrum prices as total supply increases. By continuing to prioritise efficient assignment and encouraging investment, the MIC and ARFM can set the foundation for robust network infrastructure that improves spectrum efficiency and technology advances and supports Vietnam's digital transformation and economic growth.

⁴ X-ref to Vietnam country report update.

