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# Telecommunication

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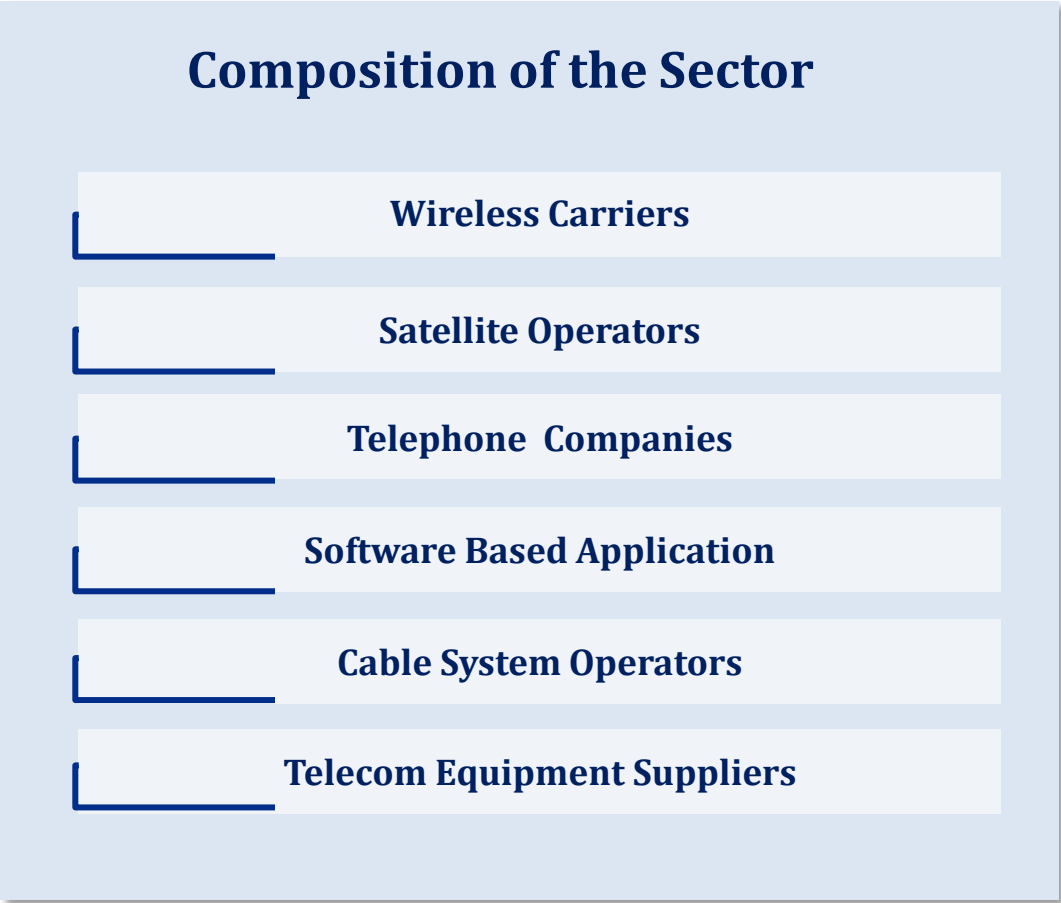
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# Telecommunication

## Introduction

*Telecommunication is the suite of technologies, devices, equipment, facilities, networks, and applications that support communication at a distance. It has infrastructure that allows data in text, voice, audio, or video to be sent anywhere in the world.*

- In Pakistan, Telecom Sector traces back to the Pakistan Telecommunication (Re-organization) Act, 1996, which established PTCL, PTA, NTC, and FAB, followed by the 2003 Deregulation Policy, which ended PTCL's exclusivity in basic telephony and opened the market to competition.
- Since deregulation, the Sector has advanced tremendously, accelerating further during the pandemic, when millions of additional subscriptions were added as routine activities shifted online.
- The rise of mobile internet and smartphones has transformed telecommunications into a daily necessity, with Pakistan's Telecommunications Sector serving ~206.0mn subscribers as of 11MFY26, achieving a tele-density of ~83.0% during the same period. The Telecommunications Sector contributed ~1.6% to national real GDP in FY26.



*Note: PBS classifies telecommunications under the "Information and Communications" Sector.*

# Telecommunication

## Global | Overview

- Deutsche Telekom is expected to retain its position as the world's most valuable telecom brand, with its brand value rising to USD ~96.2bn (CY25: USD ~85.3bn), followed by Verizon (USD ~73.0bn) and AT&T (USD ~53.9bn).
- Brand values will follow an increasing trend in CY26, with notable gains by Deutsche Telekom (+12.8%), NTT Group (+12.9%), China Mobile (+5.1%), STC (+9.3%) and e& (+7.2%). In contrast, Xfinity and Spectrum may continue to lose brand value, reflecting increasing competitive pressures in mature broadband markets.
- STC entered the top 10 in CY25, replacing Vodafone, and is expected to increase its brand value further to USD 17.6bn in CY26. e& (formerly Etisalat) also entered the top 10 in CY25, replacing China Telecom, with its brand value projected to reach USD ~16.4 bn in CY26.
- The composition of the global top ten is changing. Middle Eastern operators are becoming increasingly competitive through diversification and digital transformation, while some mature operators (such as Xfinity and Spectrum) have experienced declining brand values amid intense competition in traditional broadband markets.

| Top Ten Global Telecommunication Players   Brand Value (USD bn) |          |                      |      |      |       |
|-----------------------------------------------------------------|----------|----------------------|------|------|-------|
| Brand                                                           | Position | Country              | CY24 | CY25 | *CY26 |
| Deutsche Telekom                                                | 1        | Germany              | 73.3 | 85.3 | 96.2  |
| Verizon                                                         | 2        | United States        | 71.8 | 72.3 | 73.0  |
| AT & T                                                          | 3        | United States        | 49.3 | 52.5 | 53.9  |
| China Mobile                                                    | 4        | China                | 44.2 | 47.0 | 49.4  |
| NTT Group (Nippon Telegraph and Telephone)                      | 5        | Japan                | 31.1 | 37.1 | 41.9  |
| Xfinity (Comcast)                                               | 6        | United States        | 30.0 | 29.5 | 24.9  |
| Spectrum (Charter Communications)                               | 7        | United States        | 27.5 | 24.4 | 20.6  |
| Orange                                                          | 8        | France               | 20.3 | 17.9 | 18.9  |
| STC (Saudi Telecommunications Company)                          | 9        | Saudi Arabia         | 13.5 | 16.1 | 17.6  |
| e& (formerly Etisalat)                                          | 10       | United Arab Emirates | 11.7 | 15.3 | 16.4  |

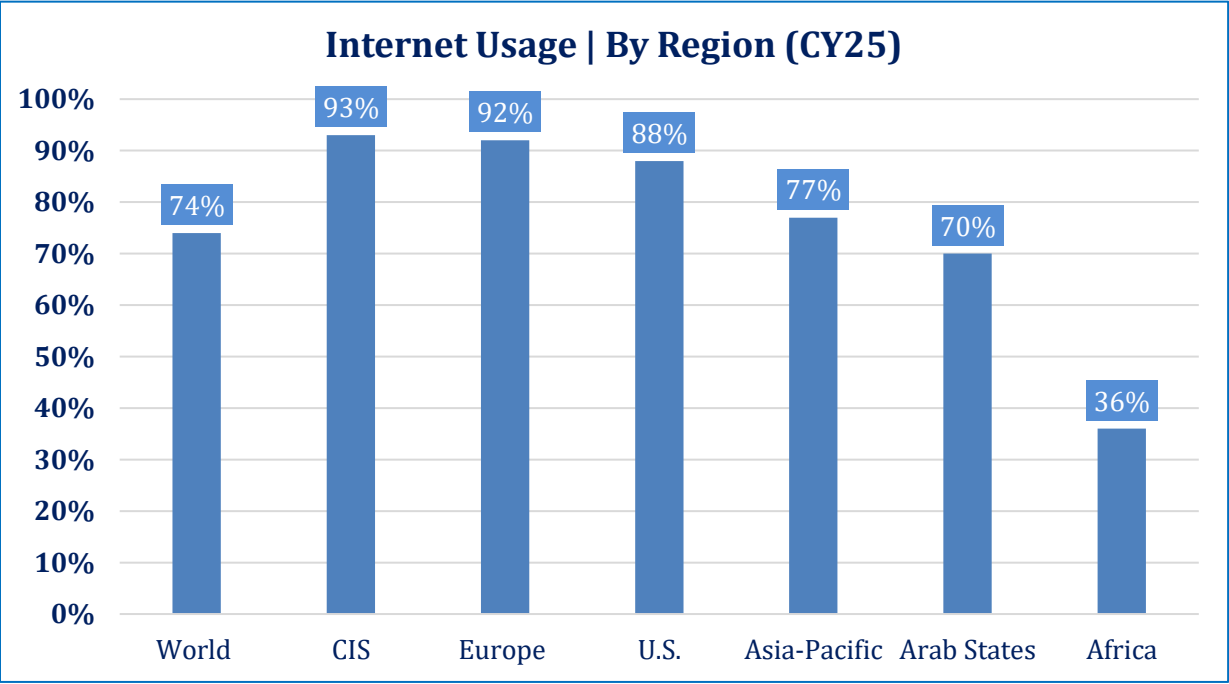
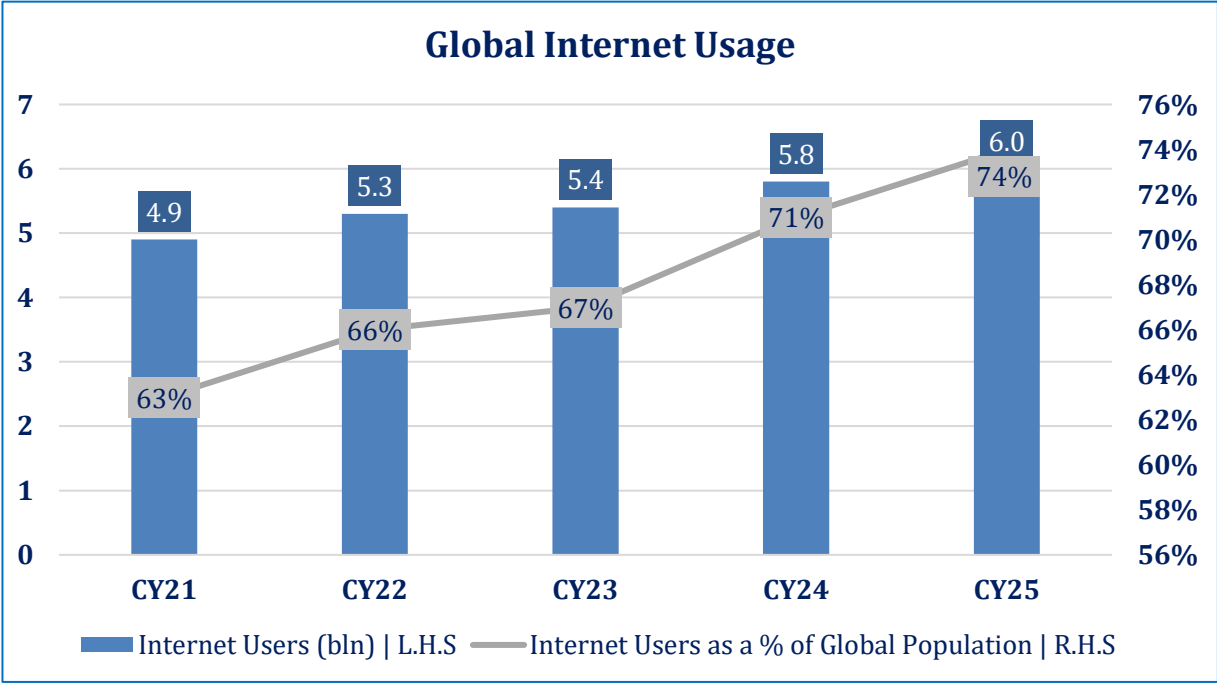
\*CY26 figures are estimated

**Note:** Brand value represents the net economic benefit that a company would derive if it licensed its brand to a third party in the open market. It is estimated by forecasting brand-attributable revenues and applying a market-based royalty rate, adjusted for the brand's strength and discounted to present value

# Telecommunication

## Global | Overview

- Global internet usage continued to expand in CY25, with the number of internet users reaching ~6.0bn, equivalent to ~74% of the global population (CY24: ~5.8bn; ~71%). The continued rise in internet penetration reflects the increasing adoption of digital services, smartphones and broadband connectivity, reinforcing telecommunications as an essential enabler of economic and social activity. Going into CY26, internet penetration is expected to sustain its upward trajectory, supported by continued fiber and broadband rollout, expanding smartphone affordability, and rising 5G adoption
- Despite the steady increase in global connectivity, internet penetration remained uneven across regions in CY25. Developed markets such as the CIS (~93%), Europe (~92%) and the U.S. (~88%) exhibit near-universal internet access, whereas Africa's penetration remained significantly lower (~36%), highlighting substantial untapped growth potential for telecom operators in emerging markets.



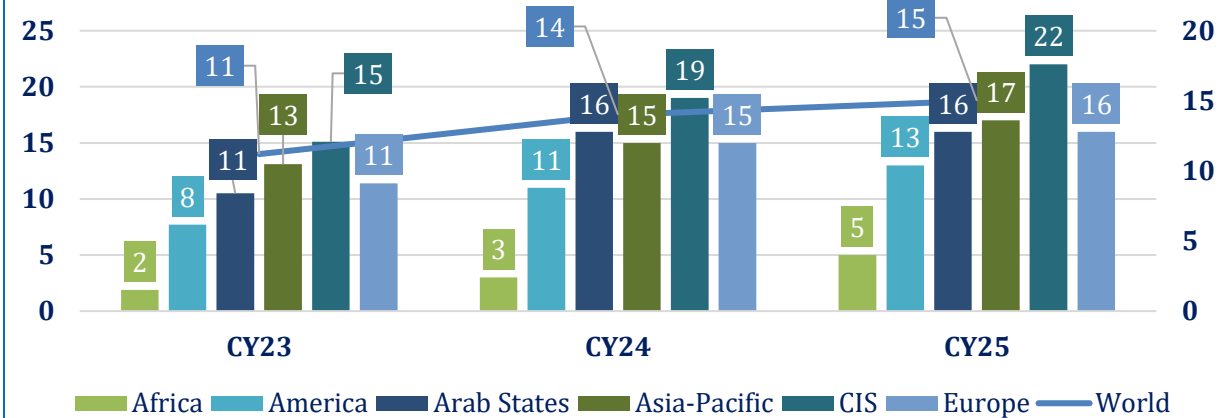
**Note:** 1 Terabit = 1,000,000 Megabit  
 CIS: Common Wealth of Independent States

# Telecommunication

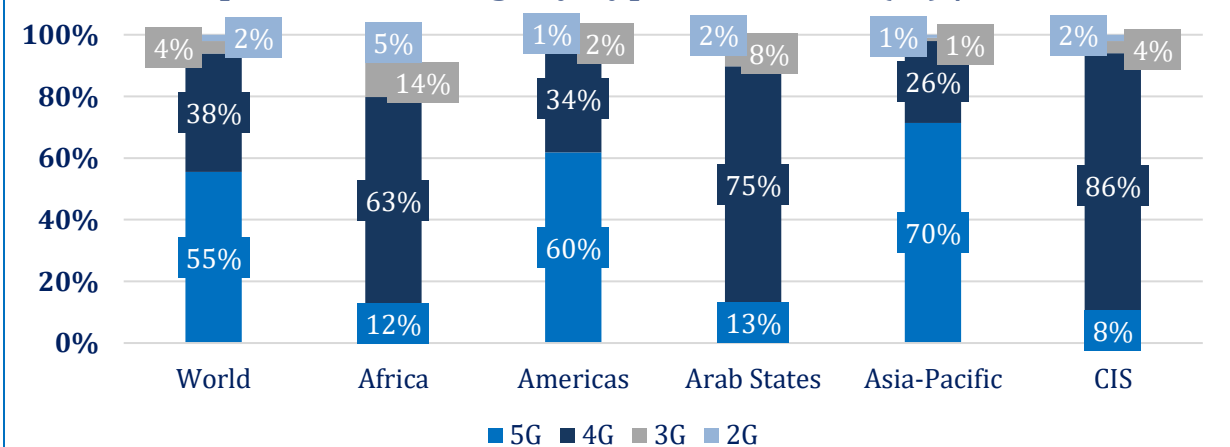
## Global | Overview

- As internet adoption expanded, mobile data consumption also increased significantly. Global mobile-broadband internet traffic per subscription rose to ~15 GB per month in CY25 (CY24: ~14 GB), reflecting the growing use of bandwidth-intensive applications such as video streaming, cloud services, online gaming and AI-enabled digital services. While data consumption increased across all regions, the CIS (~22 GB/month) and Asia-Pacific (~17 GB/month) recorded the highest average traffic per subscription, whereas Africa (~5 GB/month) continued to exhibit relatively lower usage, indicating substantial scope for future growth.
- To support the increasing demand for mobile data, telecom operators moved to expand next-generation mobile networks. By CY25, 5G covered ~55% of the global population (CY24: ~51%), while 4G remained the dominant technology across several developing regions. However, network deployment varied considerably, with Europe (~74%), Asia-Pacific (~70%) and the Americas (~60%) recording the highest 5G population coverage, whereas Africa (~12%) and the CIS (~8%) remained at earlier stages of 5G adoption, highlighting continued infrastructure investment requirements.
- Looking ahead, data consumption per subscription is expected to accelerate further in CY26, as the growing integration of AI-enabled features into everyday digital services, including generative AI applications, AI-powered search, and smart assistants, drives higher data intensity per user, placing added demand on network capacity and infrastructure.

**Mobile-broadband Internet traffic per subscription per month (GB)**



**Population Coverage by Type of Network (%) | CY25**



# Telecommunication

## Global | Market Trends

- The expansion of digital connectivity was reflected in the growing adoption of broadband services. Active mobile-broadband subscriptions increased to ~99 subscriptions per 100 inhabitants in CY25 (CY24: ~96), while fixed-broadband subscriptions also edged up to ~20 per 100 inhabitants (CY24: ~19). In contrast, fixed-telephone subscriptions remained unchanged at ~10 per 100 inhabitants, highlighting the continued structural decline of traditional voice services.
- Broadband adoption remained highest in developed regions, with Europe recording the highest fixed-broadband penetration (~37 subscriptions per 100 inhabitants), while the Americas led in active mobile-broadband subscriptions (~132 per 100 inhabitants). Conversely, Africa continued to exhibit the lowest broadband penetration, reflecting significant opportunities for future network expansion and digital inclusion.

*Subscriptions per 100 inhabitants*

| Broadband/ Telephone Subscriptions | CY23 | CY24 | CY25 |
|------------------------------------|------|------|------|
| Fixed-Telephone (FT)               | 11   | 10   | 10   |
| Fixed-Broadband (FB)               | 19   | 19   | 20   |
| Mobile-Cellular Telephone (MCT)    | 110  | 110  | 112  |
| Active Mobile-Broadband (AMB)      | 93   | 96   | 99   |

| Subscriptions (CY25) | Africa | Americas | Arab States | Asia Pacific | CIS | Europe |
|----------------------|--------|----------|-------------|--------------|-----|--------|
| FT                   | 0      | 16       | 10          | 8            | 12  | 27     |
| FB                   | 1      | 28       | 12          | 21           | 27  | 37     |
| MCT                  | 92     | 115      | 106         | 112          | 159 | 127    |
| AMB                  | 56     | 132      | 90          | 101          | 123 | 116    |

*Note: Number of Subscriptions per 100 inhabitants is greater than 100 based on the assumption that an individual has more than one subscription of a mobile service.*

# Telecommunication

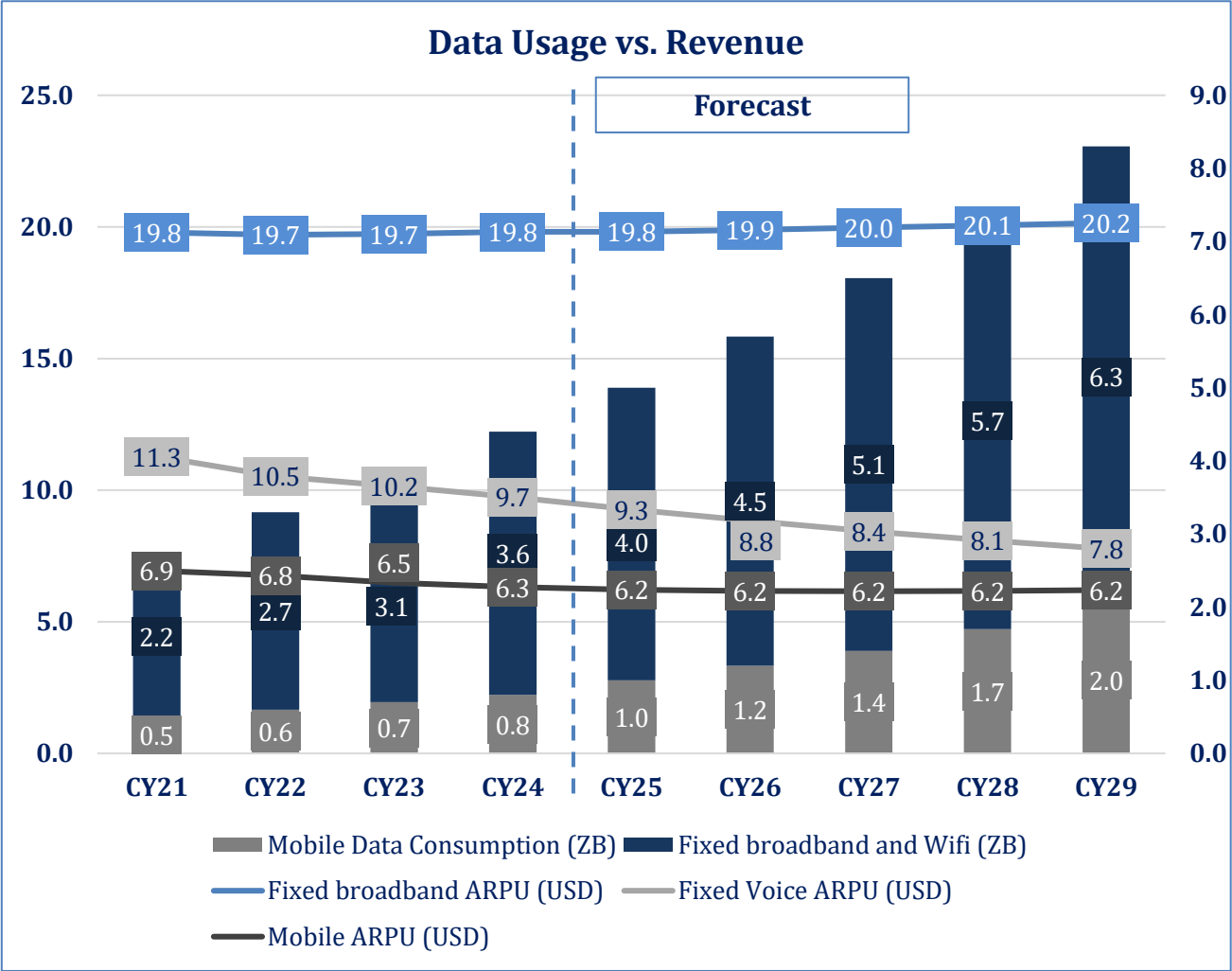
## Global | Country-wise (Asia) Spectrum Planning | FY26

| Country    | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bangladesh | The Bangladesh Telecommunication Regulatory Commission (BTRC) issued the Instructions for Radio Frequency Auction 2026 in November 2025, offering spectrum in the 700 MHz band to expand nationwide 4G coverage and facilitate future 5G deployment. The auction was scheduled for January 2026 under a 15-year license framework.                                                                                                                                                                                                                                                                                                                                                                                       |
| India      | The Department of Telecommunications (DoT) released the National Frequency Allocation Plan (NFAP) 2025, effective 30 December 2025, aligning India's spectrum framework with the ITU Radio Regulations 2024. The plan identifies additional spectrum bands for IMT (5G, 5G-Advanced and future 6G) and provides the regulatory framework for future spectrum assignments. Separately, TRAI submitted recommendations for the next IMT spectrum auction, proposing that all available spectrum in the 600 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz and 26 GHz bands be auctioned under 20-year licenses, while recommending that the upper 6 GHz band be reserved pending WRC-27 outcomes. |
| Pakistan   | The Government of Pakistan approved the policy framework for the NGMS/5G spectrum auction, and the Pakistan Telecommunication Authority (PTA) published the Information Memorandum for the award of spectrum in the 700, 1800, 2100, 2300, 2600 and 3500 MHz bands, laying the foundation for Pakistan's first nationwide 5G spectrum auction.                                                                                                                                                                                                                                                                                                                                                                           |
| Sri Lanka  | The Telecommunications Regulatory Commission of Sri Lanka (TRCSL) completed the country's first-ever spectrum auction in December 2025 and assigned IMT-2020 (5G) spectrum in the 3.5 GHz and 27 GHz bands. Dialog Axiata was assigned 100 MHz in the 3.5 GHz band and 200 MHz in the 27 GHz band, while Sri Lanka Telecom Mobitel was assigned 100 MHz in the 3.5 GHz band, enabling the commercial rollout of 5G services.                                                                                                                                                                                                                                                                                             |
| Thailand   | The National Broadcasting and Telecommunications Commission (NBTC) completed a multi-band IMT spectrum auction in June 2025, assigning spectrum in the 1500 MHz, 2100 MHz and 2300 MHz bands to support 5G network expansion. The auction followed the NBTC's 2024–2029 IMT Spectrum Roadmap and forms part of Thailand's strategy to enhance digital infrastructure and prepare for future 5G-Advanced and 6G services.                                                                                                                                                                                                                                                                                                 |
| Vietnam    | The Ministry of Science and Technology reopened the auction of the 700 MHz spectrum band in July 2025 after an earlier auction round failed. The re-auction forms part of Vietnam's roadmap to expand nationwide 4G and 5G coverage, complementing the country's first successful 5G spectrum auctions completed in 2024 for the 2.6 GHz, 3.7 GHz and 3.8 GHz bands.                                                                                                                                                                                                                                                                                                                                                     |

# Telecommunication

## Global | Data Usage vs. Revenue

- Data usage continues to outpace revenue growth into CY26. Mobile data consumption is projected to rise from ~1.0 ZB in CY25 to ~1.2 ZB in CY26 (~20% growth), while fixed broadband and WiFi traffic climbs from ~4.0 ZB to ~4.5 ZB (~12.5% growth). Despite this surge, ARPU across segments is expected to remain largely stagnant, fixed broadband ARPU will edge up marginally from USD~19.8 to USD~19.9, mobile ARPU will hold flat at USD~6.2, and fixed voice ARPU is projected to continue its decline, falling from USD~9.3 to USD~8.8 (~5.4% YoY).
- This trend shows that connectivity has most likely become a commoditized utility. Customers are increasingly viewing data services as essential infrastructure with no willingness to pay premium prices. This is forcing operators to compete on cost rather than value, despite delivering more bandwidth exponentially. As a result, telecom companies are increasingly focusing on improving operational efficiency, including the use of AI, and developing new revenue streams instead of relying solely on higher connectivity prices.



# Telecommunication

## Global | Key Takeaways

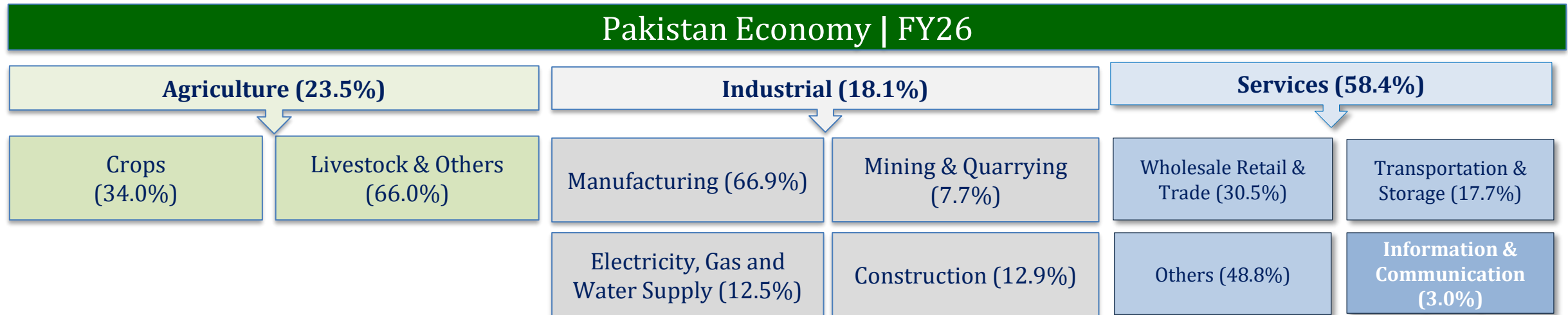
- **5G adoption has reached global scale:** Worldwide 5G subscriptions have surpassed 3bn, with 5G networks now carrying half of all global mobile data traffic for the first time. Approximately 390 operators have launched commercial 5G services, with over 90 offering 5G standalone (SA) architecture.
- **Artificial intelligence has become a dual-purpose strategic priority for operators:** Beyond deploying AI for internal operational efficiencies (customer service automation, network optimization), operators are increasingly monetizing AI capabilities through offerings such as GPU-as-a-Service, sovereign AI cloud infrastructure, and strategic partnerships with hyperscalers to capture new revenue streams.
- **Uplink capacity constraints have emerged as a structural network challenge:** The proliferation of AI-driven applications, smart wearables, autonomous vehicles, and agentic AI systems has generated disproportionately high uplink traffic demands, with the majority of surveyed operators reporting uplink growth outpacing downlink growth — a pattern that legacy network architectures were not originally designed to accommodate.
- **Differentiated connectivity services have scaled significantly:** The number of commercially available 5G SA network slicing offerings has grown substantially within a six-month period, with real-world deployments demonstrating measurable performance improvements in both throughput and latency for prioritized use cases.
- **Fixed Wireless Access and eSIM adoption have accelerated markedly:** A growing majority of FWA service providers now deliver services over 5G infrastructure, while eSIM technology is projected to constitute a substantial share of all SIM technologies by the end of the decade, driven in part by leading device manufacturers transitioning to eSIM-only form factors.
- **Telecom is a massive part of the economy, but also a growing scam target:** Mobile technology added about USD~7.6Tn to the global economy in 2025 (expected to grow further by 2030), while online scams and cybercrime are also expanding fast; as a result telecom companies are investing heavily in stronger security to protect customers and networks.

Telecom industry revenue is projected to grow ~2.8% through 2029, reaching USD~1.32Tn, as AI and data center investment outpaces spending on network infrastructure.

# Telecommunication

## Local | Overview

- In FY26, Pakistan's GDP (nominal) stood at PKR~126.9Tn, increasing ~11.3% YoY (FY25: ~8.3% growth). Industrial activities during the year held ~18.1% share in the GDP, while services made up ~58.4%.
- The Telecommunication Sector broadly falls under the Services segment. Being one of the largest segments of the economy, the Sector players primarily carry on all or any of the businesses of establishing, developing, expanding, enhancing, managing and operating telecommunication systems including systems signals, data or messages of any and all kinds. Telecommunication Sector made up ~3.0% of value addition in the Services segment.
- Pakistan's Telecom Sector continued to grow under PTA's regulatory support, with reforms improving digital infrastructure, investment, cybersecurity, and service quality. Despite economic challenges, the Sector recorded gains in network coverage, broadband adoption, and revenue, reinforcing its role in Pakistan's digital economy.



# Telecommunication

## Local | Overview

- Telecom Sector revenue stood at PKR~837bn in 9MFY26. The revenue is expected to increase to PKR~1,116bn in FY26 from PKR~1,075bn in FY25. Meanwhile, the Sector's contribution to GDP remained stable at ~1.6% in FY26.
- The telecom Sector's contribution to the national exchequer stood at PKR~348bn in 11MFY26, tracking below the full-year FY25 level of PKR~402bn.
- FDI inflow softened to USD~63mn in 11MFY26 from USD~99mn in FY25, while net FDI deteriorated sharply to USD~-488mn (11MFY26) from USD~-131mn (FY25), implying outflows of roughly USD~551mn, pointing to a large one-off repatriation during the period, consistent with a major player's exit from Pakistan.
- Tele-density improved to ~83.0% in 11MFY26 from ~81.0% in FY25, alongside continued subscriber growth to ~206mn from ~197.8mn.

| Sector Snapshot                 | FY24 | FY25  | FY26   |
|---------------------------------|------|-------|--------|
| <b>Telecom Revenue (PKR bn)</b> | 957  | 1,075 | 1,116* |
| <b>Contribution to GDP - %</b>  | 1.6% | 1.6%  | 1.6%   |

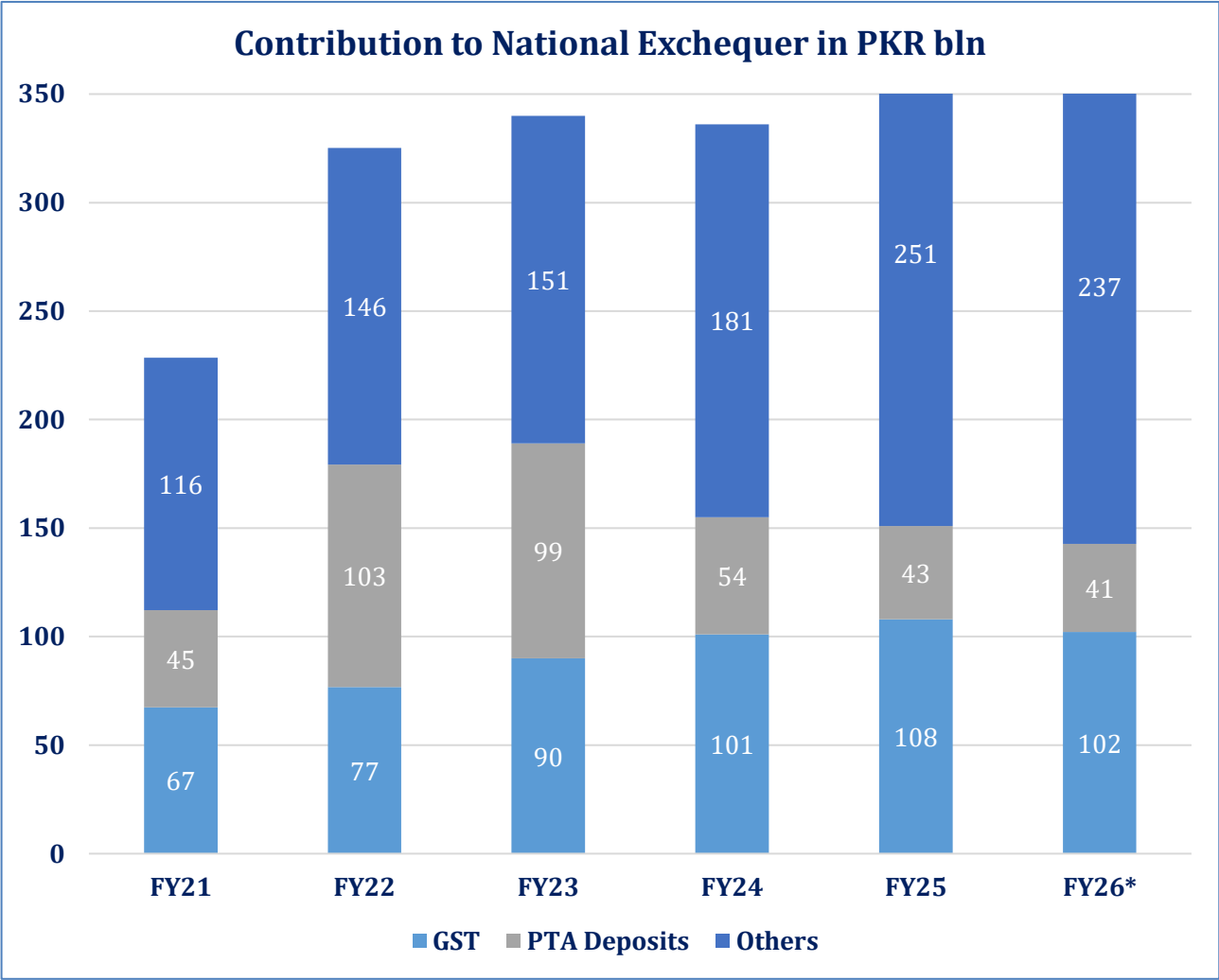
| Particulars                                        | FY23                                                                                      | FY24  | FY25  | 11MFY26 |
|----------------------------------------------------|-------------------------------------------------------------------------------------------|-------|-------|---------|
| <b>Contribution to National Exchequer (PKR bn)</b> | 341                                                                                       | 336   | 402   | 348     |
| <b>FDI Inflow (USDmn)</b>                          | 58                                                                                        | 46    | 99    | 63      |
| <b>Net FDI (USDmn)</b>                             | -222                                                                                      | -44   | -131  | -488    |
| <b>Tele-density (%)</b>                            | 81.4%                                                                                     | 80.5% | 81.0% | 83.0%   |
| <b>Total Cellular Subscribers (mn)</b>             | 191.0                                                                                     | 192.5 | 197.8 | 206     |
| <b>Major Sector Players Structure</b>              | 3<br>Oligopoly                                                                            |       |       |         |
| <b>Regulatory Authority</b>                        | Pakistan Telecommunication Authority (PTA),<br>Ministry of Information Technology (MOITT) |       |       |         |

*\*Note: Revenue figures for FY26 have been annualized from July-March 2026 figures. For contribution to GDP, CY=FY. Contribution is in real GDP.*

# Telecommunication

## Local | Contribution to National Exchequer

- The Telecom Sector's contribution to the national exchequer increased by ~19.6% YoY to PKR~402bn in FY25 (FY24: PKR~336bn). The increase was primarily driven by the 'Others' category (other taxes include WHT, Income Tax, etc.) , which rose by ~38.7% YoY to PKR~251bn (FY24: PKR~181bn), more than offsetting the decline in PTA deposits, which fell to PKR~43bn (FY24: PKR~54bn). Meanwhile, GST collections increased by ~6.9% YoY to PKR~108bn (FY24: PKR~101bn), reflecting stable growth in telecom service consumption and Sector revenues.
- Going into FY26, exchequer contribution is likely to see a further uplift, with PTA deposits set to benefit from proceeds of the March 2026 spectrum auction (USD~510mn across Jazz, Ufone and Zong), reversing the FY25 decline in this category. Continued growth in Sector revenues should also sustain the upward momentum in GST collections.

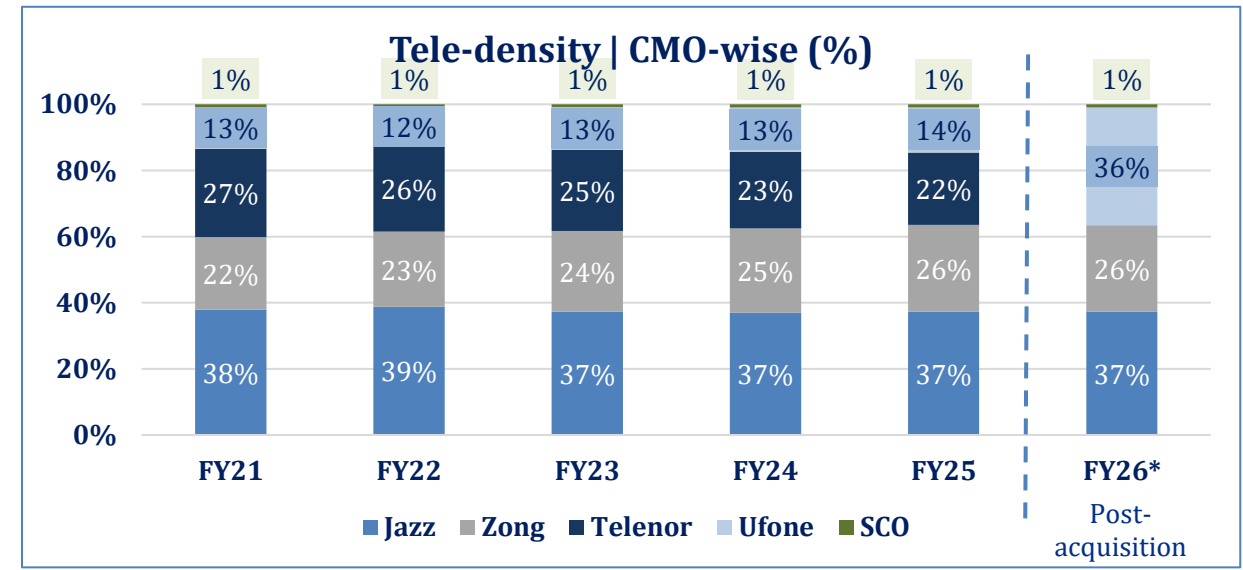
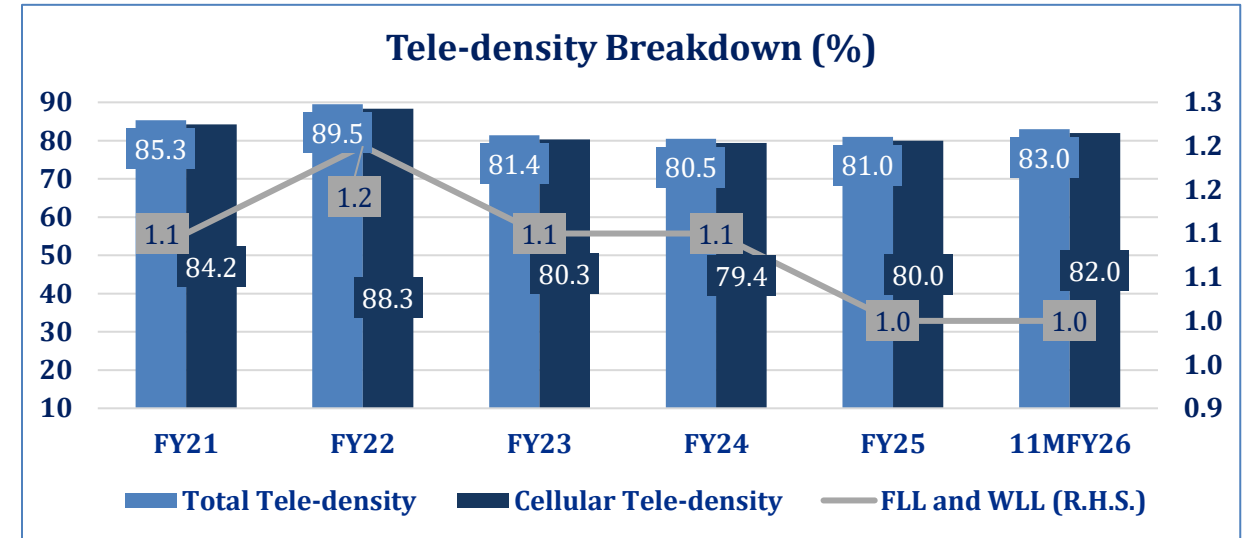


*\*FY26 figures have been annualized from 9MFY26 data. Composition has been assumed to remain unchanged in FY26*  
**Note:** PTA Deposits refer to deposits made in Federal Consolidated Fund by the entity against spectrum auctions.

# Telecommunication

## Local | Tele-density & Market Share

- During 11MFY26, tele-density improved to ~83.0%, with cellular tele-density rising to ~82.0%, indicating continued expansion in mobile subscriptions. Overall tele-density remained stable at ~81.0% in FY25 (FY24: ~80.5%), supported by sustained growth in mobile connectivity. Cellular tele-density increased marginally to ~80.0% (FY24: ~79.4%), while Fixed Local Loop (FLL) and Wireless Local Loop (WLL) penetration declined to ~1.0% (FY24: ~1.1%), reflecting the continued substitution of fixed-line services with mobile broadband.
- Pakistan's mobile subscriber base remained concentrated among four operators in CY25. Jazz remained the strongest Sector player with a ~37% subscriber share. Zong strengthened its market position, increasing its subscriber share to ~26% (CY24: ~25%), while Ufone also gained share to ~14% (CY24: ~13%). Conversely, Telenor's market share declined to ~22% (CY24: ~23%). SCO maintained a stable market share of ~1%, mainly in the northern part of the country.
- In July 2026, Telenor Pakistan formally merged into Pak Telecom Mobile Limited (PTML) after all regulatory approvals, operating under the Ufone brand. Based on this, it is expected that Ufone would hold ~36% tele-density share in FY26, making it Pakistan's second-largest operator, behind Jazz (~37%) and ahead of Zong (~26%). This is expected to reduce price competition and shift the focus toward better service and bundled offerings. For the PTCL Group, the merger strengthens its market position but may temporarily increase leverage due to integration costs before cost savings and network synergies are realized.

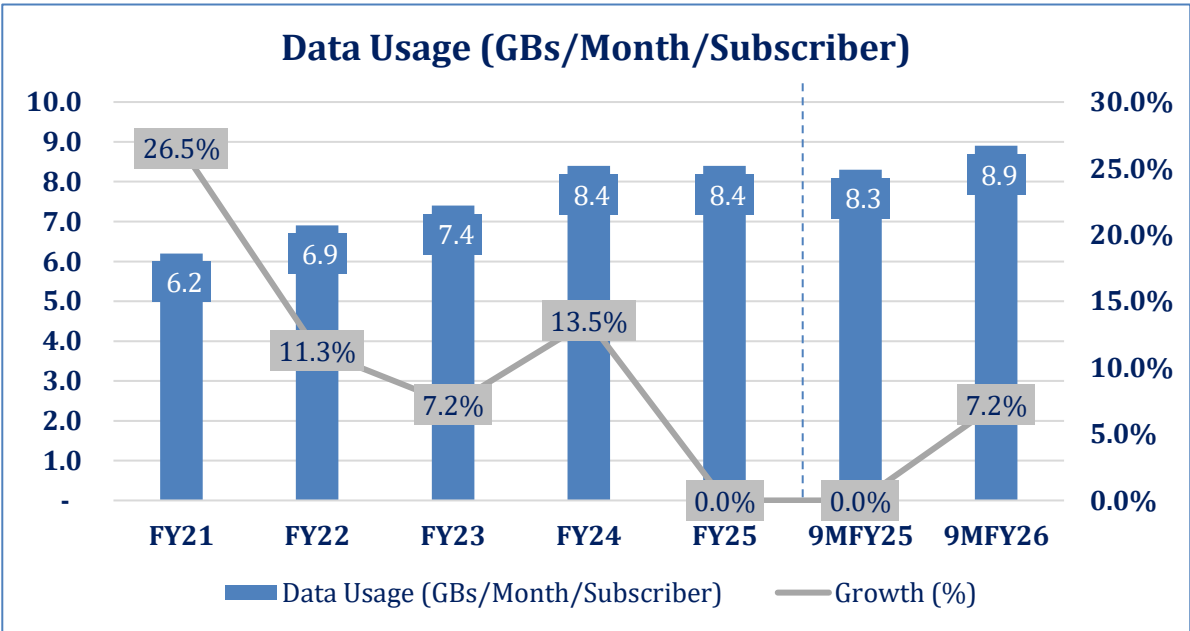
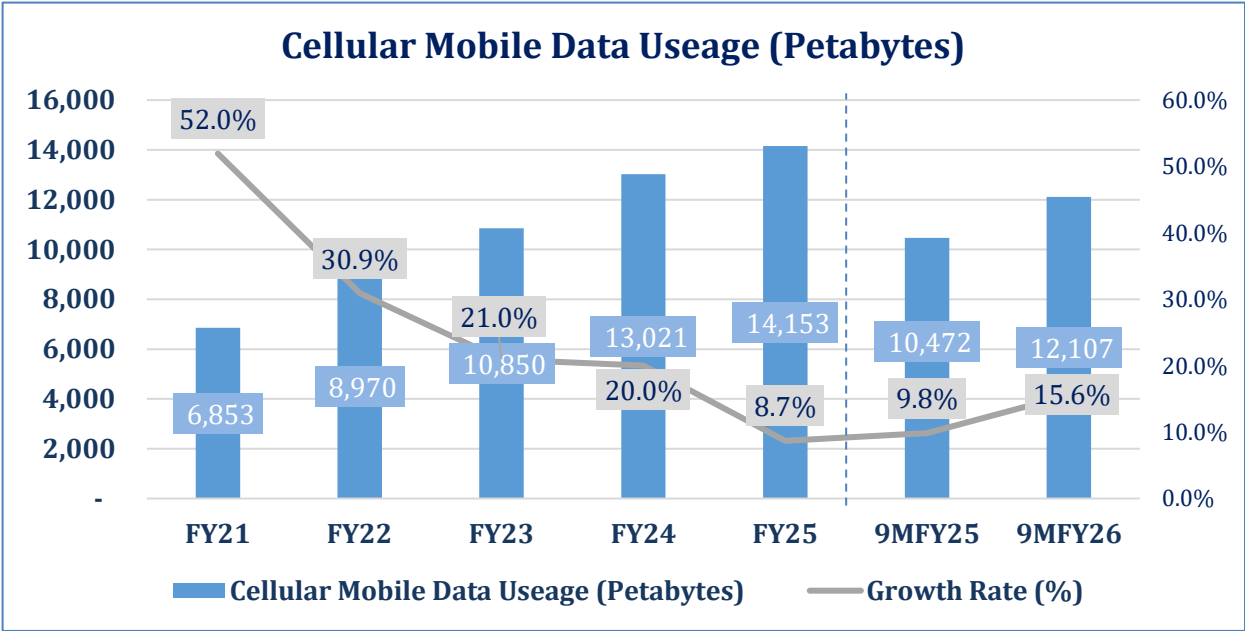


\*Subscriber shares for Jazz, Zong and SCO are assumed to remain unchanged in FY26.

# Telecommunication

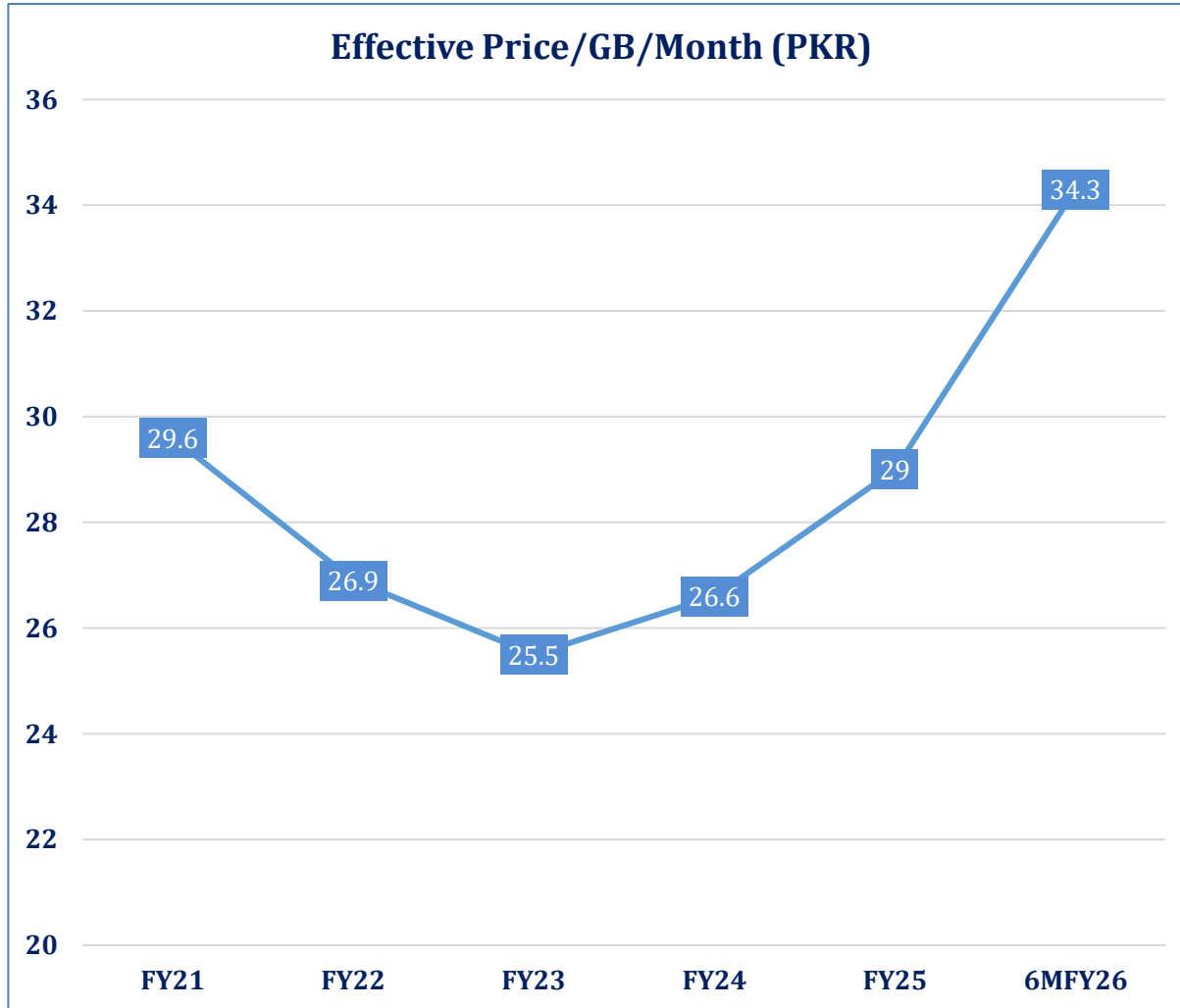
## Local | Data Usage

- Total cellular mobile data usage increased by 15.6% YoY to ~12,107 petabytes in 9MFY26 (9MFY25: ~10,472 petabytes), marking a notable improvement from the ~9.8% growth recorded in the same period last year. This indicates a renewed acceleration in overall mobile data consumption after several years of moderate growth. Average data usage per subscriber rose by ~7.2% YoY to ~8.9 GB/month in 9MFY26 (9MFY25: ~8.3 GB/month), reversing the flat growth observed in the previous year.
- The stronger growth in total traffic (~15.6%) relative to per-subscriber usage (~7.2%) suggests that mobile data demand was supported by both an expanding subscriber base and higher consumption by existing users. The rebound in data consumption occurred despite an increase in the effective price per GB during the period (as shown in the pricing chart on the next slide). This suggests that improvements in network quality, broader 4G coverage and rising demand for data-intensive applications such as video streaming and social media outweighed the impact of higher data prices, resulting in resilient demand for mobile broadband.



# Telecommunication

## Local | Price

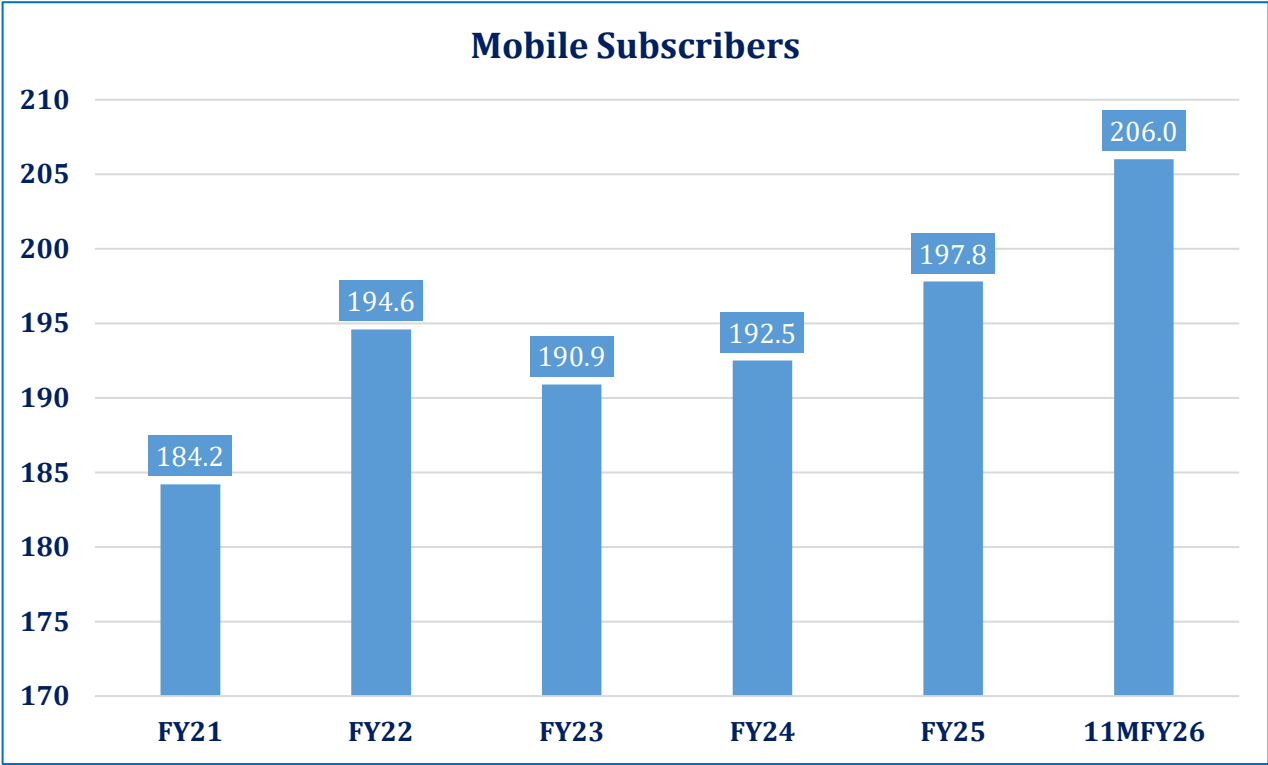


- Supported by proactive regulation and a competitive market structure, Pakistan has emerged as one of the most cost-effective telecom markets globally. The price of 1 GB of data, at USD~0.12, ranks lowest in the region and sixth-lowest worldwide. High competition among Sector players and improvement in technology infrastructure resulted in low per-unit data costs.
- Effective price per GB rose to PKR~29.0/month in FY25 (FY24: PKR~26.6), continuing the reversal from the FY23 trough of PKR~25.5. This upward trend accelerated sharply in 6MFY26, with effective price reaching PKR~34.3/month, an ~18% increase over the FY25 level in just half a year, marking the steepest period-on-period jump across the entire five-year series shown.
- The increase in 6MFY26 is consistent with the PTA-approved ~19% tariff increase implemented by Jazz, the Sector's largest operator in 2025, which generated over PKR ~6bn in additional revenue. As tariff revisions are reflected gradually through billing cycles and contract renewals, the pricing impact became more pronounced over subsequent periods.

# Telecommunication

## Local | Cellular Subscribers

- Mobile subscribers increased from ~197.8mn in FY25 to ~206.0mn by 11MFY26, adding ~8.2mn users despite the market already having high penetration and approaching saturation point.
- The shift toward data-enabled devices also continued, with 3G/4G handsets accounting for ~71% of the network in FY25 (FY24: ~65%), while the 2G share declined to ~29% (FY24: ~35%). However, this transition has slowed in 11MFY26, with 3G/4G penetration rising only marginally to ~71.6% (2G: ~28.4%). This suggests that most users who were likely to upgrade have already done so, while the remaining 2G users may face affordability or access constraints, limiting further migration.



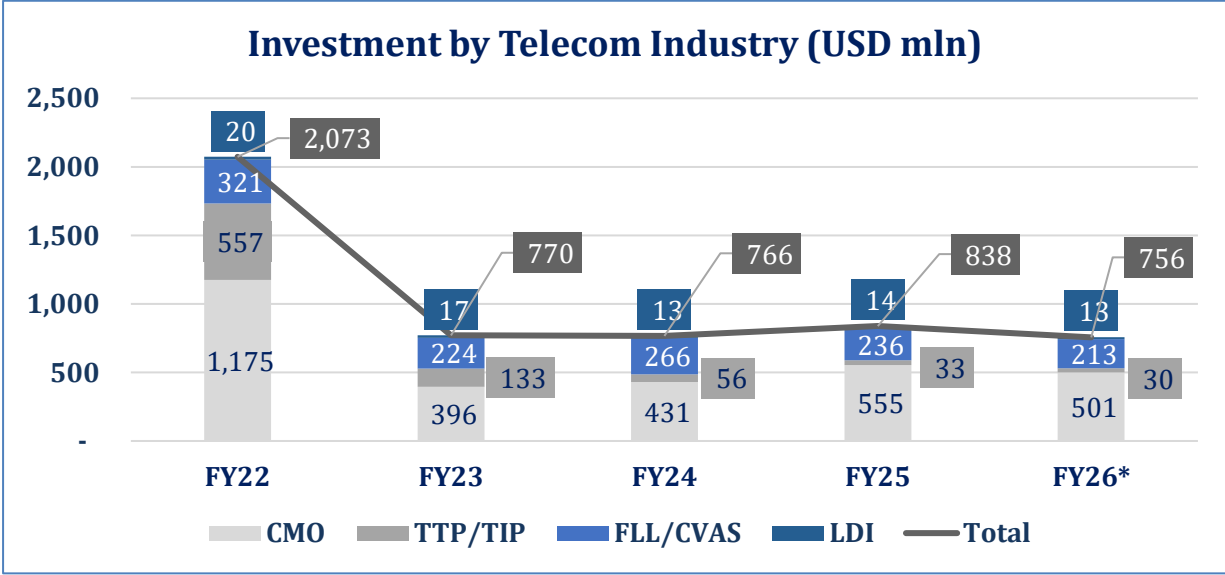
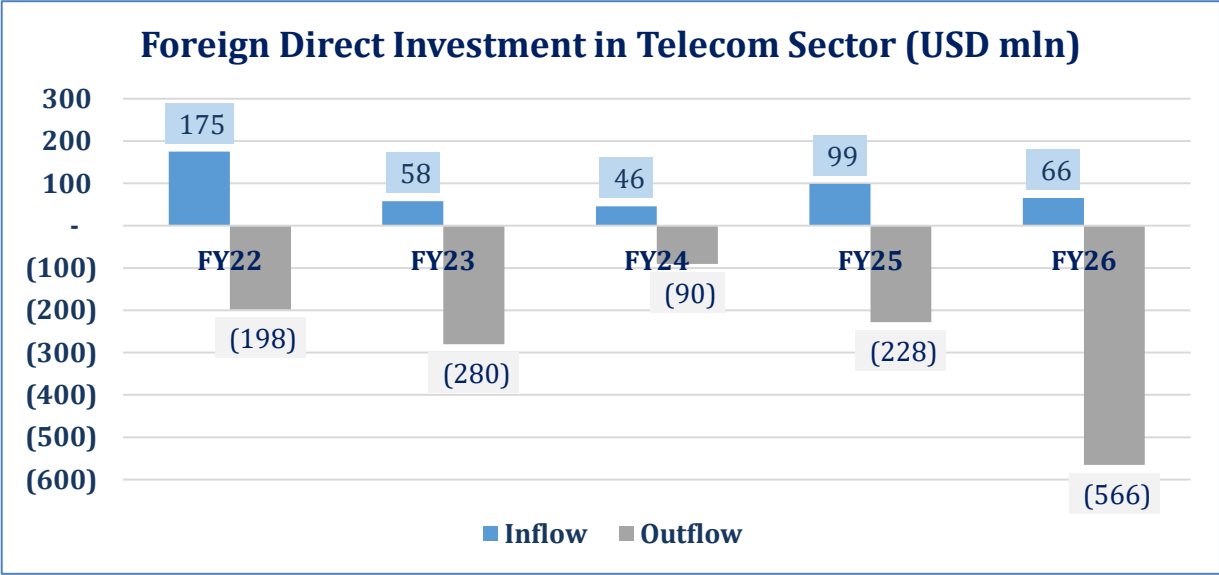
| Uptake of 3G/4G Devices<br>(% of IMEIS on Mobile Network) |     |       |
|-----------------------------------------------------------|-----|-------|
| Period                                                    | 2G  | 3G/4G |
| FY21                                                      | 48% | 52%   |
| FY22                                                      | 44% | 55%   |
| FY23                                                      | 43% | 57%   |
| FY24                                                      | 35% | 65%   |
| FY25                                                      | 29% | 71%   |
| 11MFY26                                                   | 28% | 72%   |

*Note: Latest available. 9MFY26 is assumed to be same as 11MFY26 for Uptake of 3G/4G Devices*

# Telecommunication

## Local | Investments

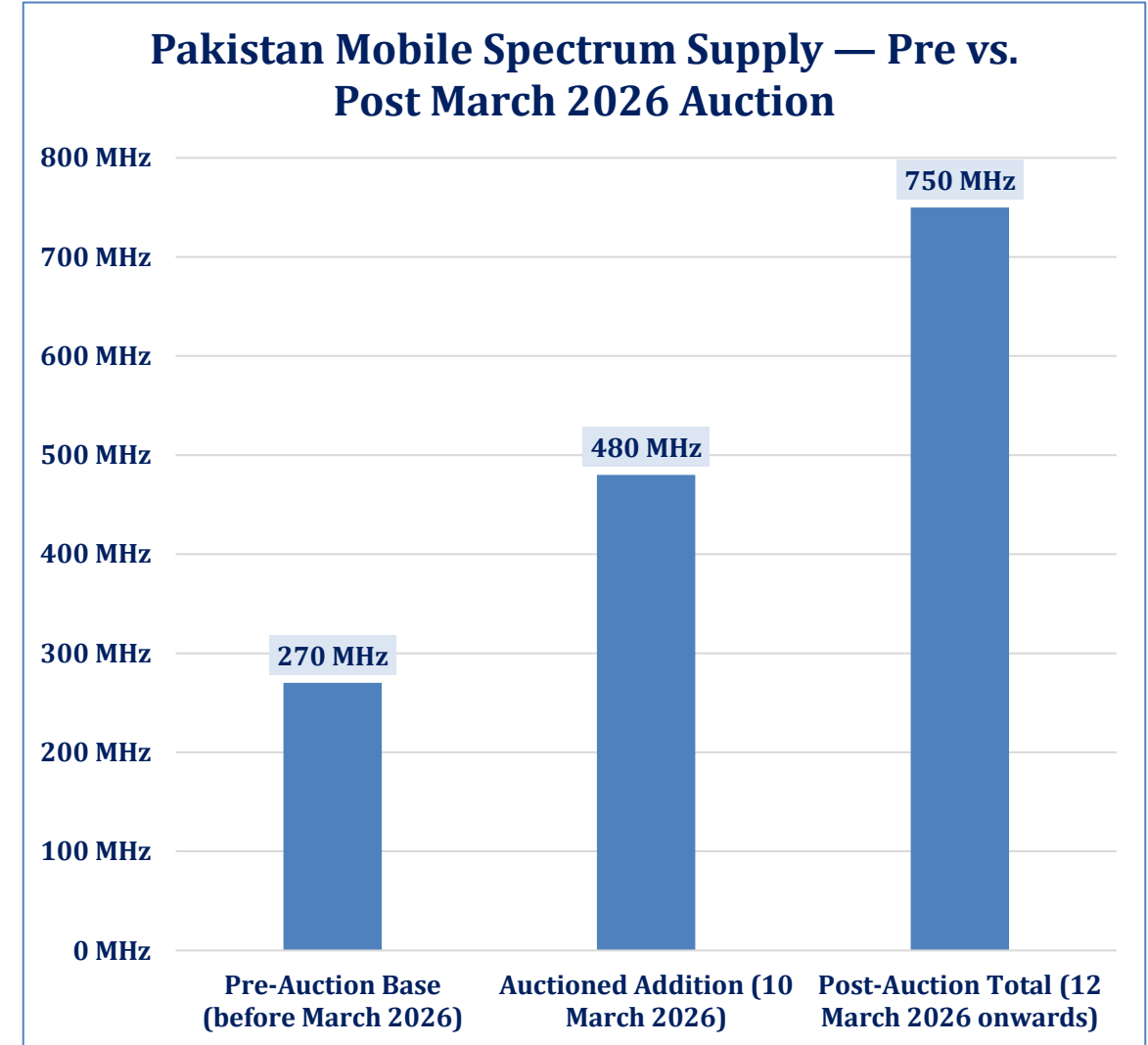
- Telecom FDI weakened sharply in FY26, with gross inflows falling to USD~66mn in FY26 from USD~99mn in FY25, as operators financed 5G-related capex primarily through domestic long-term borrowing rather than fresh foreign equity. This is consistent with the PKR-denominated structure of the March 2026 spectrum auction, which reduced the Sector's need for dollar-based capital injections. Outflows, meanwhile, surged to USD~566mn from USD~228mn, driven predominantly by the PTCL-Telenor transaction, under which Telenor Group's exit from its Pakistan equity position constituted a large one-off repatriation.
- Telecom sector investment declined by ~9.8% YoY to USD ~756mn in FY26 from USD ~838mn in FY25, marking a moderation in capital expenditure after the stronger investment cycle in FY25. The decline was driven primarily by CMOs, whose investment fell to USD ~501mn (FY25: USD ~555mn), while TTP/TIP spending also eased to USD ~213mn (FY25: USD ~236mn). FLL/CVAS and LDI investment remained relatively small and broadly stable at USD ~30mn and USD ~13mn, respectively. Despite the overall slowdown, CMOs continued to account for around two-thirds of total sector investment, reflecting the industry's continued focus on expanding and upgrading mobile broadband infrastructure.



# Telecommunication

## Local | 5G Spectrum Auction

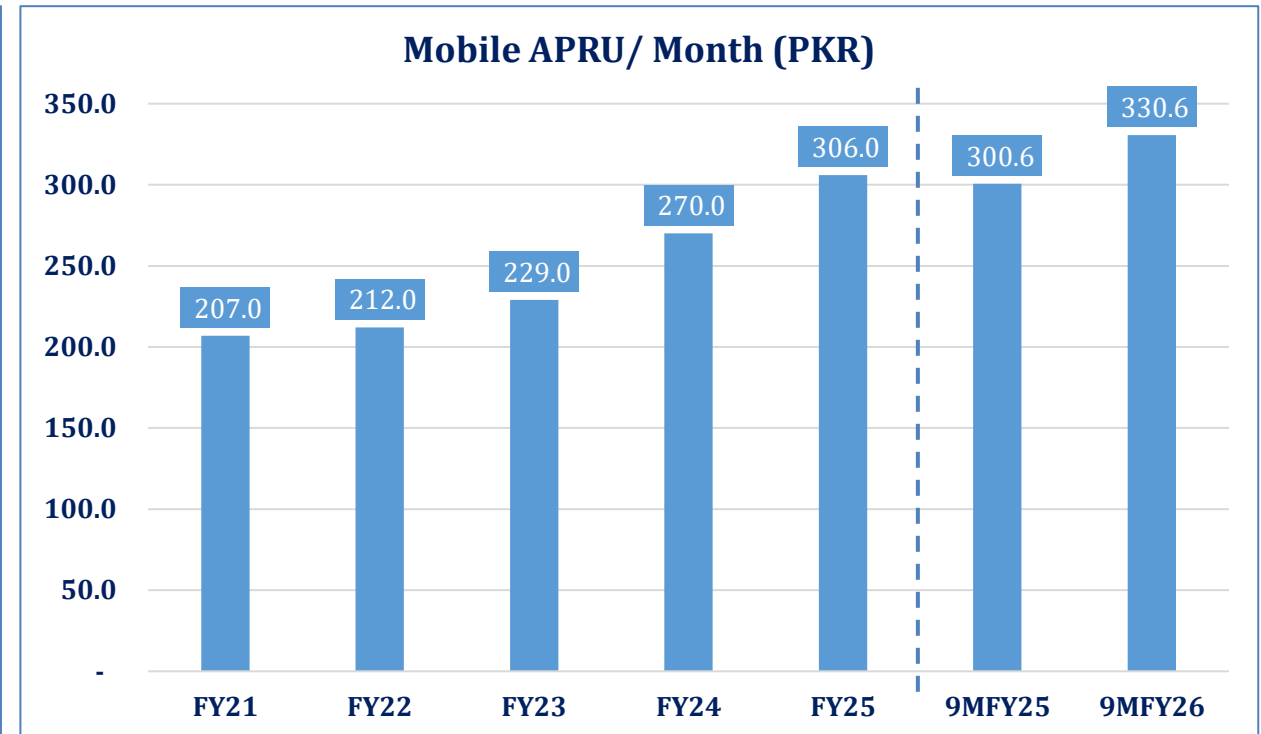
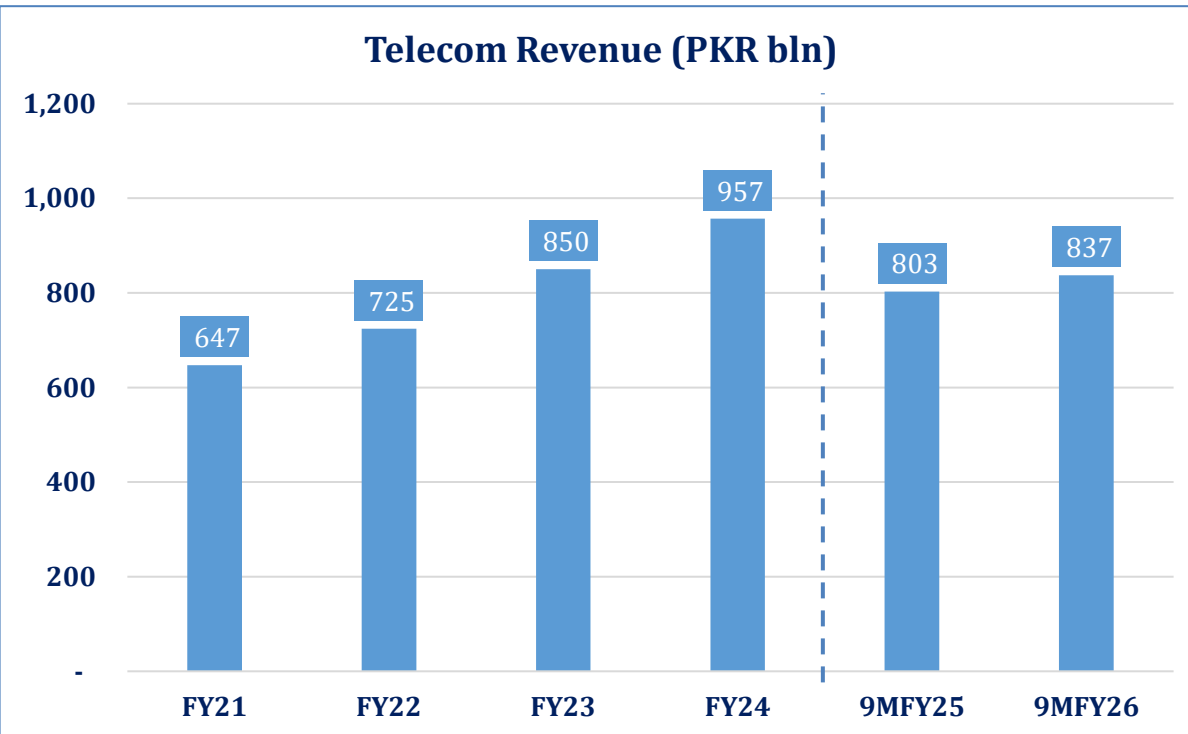
- Pakistan's multiband spectrum auction, completed in early March 2026, saw Jazz, Ufone and Zong acquire a combined 480 MHz across four bands (700 MHz, 2.3 GHz, 2.6 GHz and 3.5 GHz) for USD~510mn (PKR~142 bn). This nearly tripled total mobile spectrum supply from around 270 MHz to over 750 MHz, with each operator securing over 100 MHz of mid-band spectrum, laying the groundwork for 5G in Pakistan.
- Earlier auctions in 2014 and 2021 had left spectrum unsold due to high reserve prices and weak demand, contributing to slower 4G rollout, compounded by inflation, currency depreciation and rising energy costs that squeezed both consumers and operators.
- There were a few reasons why this auction was successful. Firstly, spectrum was offered across multiple bands with reserve prices set below levels seen in comparable recent auctions in Bangladesh and Vietnam to encourage participation. Payments were denominated in PKR at the auction-date exchange rate rather than USD as before, removing currency-fluctuation risk for operators. Licenses carried coverage and quality-of-service obligations phased over four stages across a decade, covering new 4G/5G site rollout and minimum speed thresholds, reflecting a broader global shift toward prioritizing long-term investment over maximizing short-term auction revenue.



# Telecommunication

## Local | Business Risk

- The telecom Sector continued to expand in 9MFY26, with total revenue increasing by ~4.2% YoY to PKR~837bn from PKR 803bn in 9MFY25. Growth in Sector revenue was largely driven by the mobile segment. Rising data consumption, expanding broadband adoption, and continued subscriber growth increased demand for mobile services, while operators also implemented tariff revisions to partially offset inflation and higher operating costs.
- Mobile ARPU increased by ~10.0% YoY to PKR 330.6 per month from PKR~300.6. Pakistan's ARPU has been rising due to the expansion of broadband services, more flexible pricing by telecom operators amid inflationary pressures, and a decline in the multi-SIM phenomenon, all of which have increased average spending per subscriber.



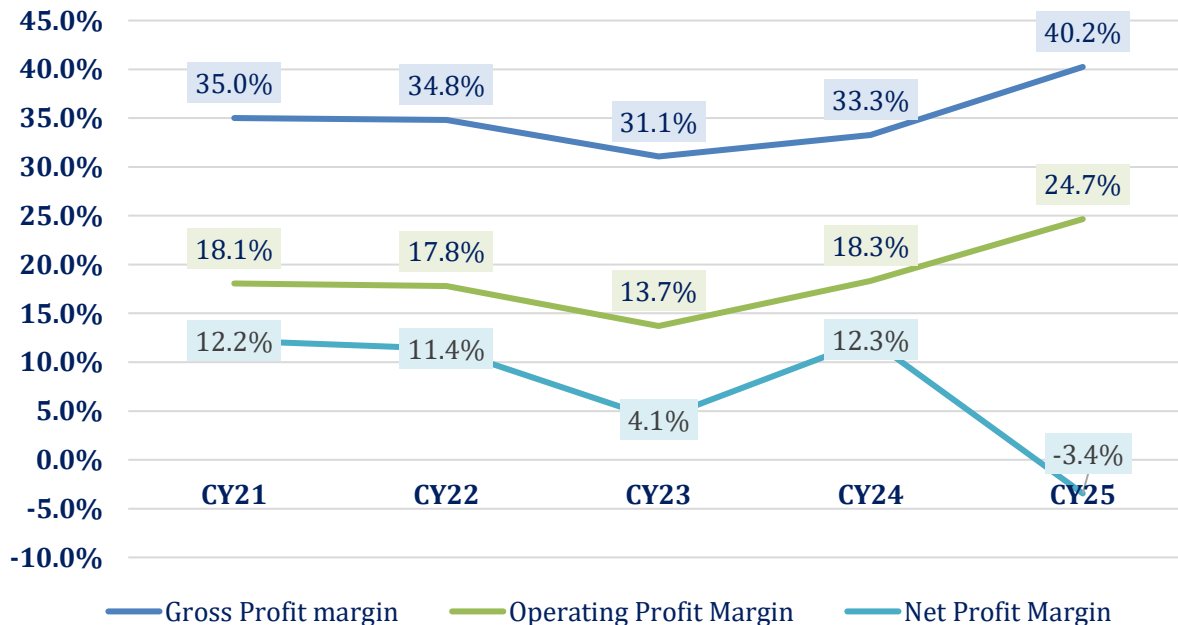
\*Revenue figures for FY26 have been annualized from 9MFY26 figures.

# Telecommunication

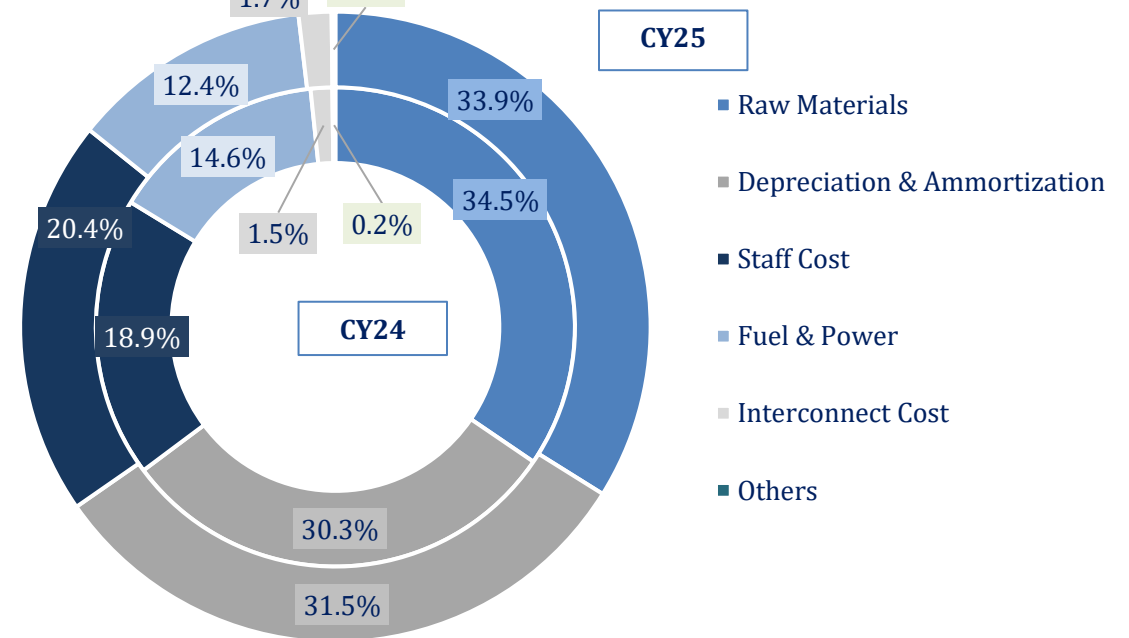
## Local | Business Risk

- The Telecom Sector's gross profit margin improved to ~40.2% in CY25 (CY24: ~33.3%), while operating profit margin increased to 24.1% (CY24: 18.3%). This increase was due to higher sales revenue as Sector Players charged higher price per GB during 6MCY26 (PKR~34.3, ~18% higher than the CY25 price).
- However, net profit margin declined sharply to negative ~3.4% in CY25 (CY24: ~12.3%), as improved operating performance was outweighed by higher finance costs and one-off tax charge as a major Sector player settled a backlog of prior-year tax disputes and tax arising on the disposal of its tower business through ADRC settlement. Net margins are expected to recover to positive territory going forward, supported by the absence of these exceptional tax charges, although financing costs and exchange rate movements will remain key determinants of profitability.

**Profit Margins (%)**



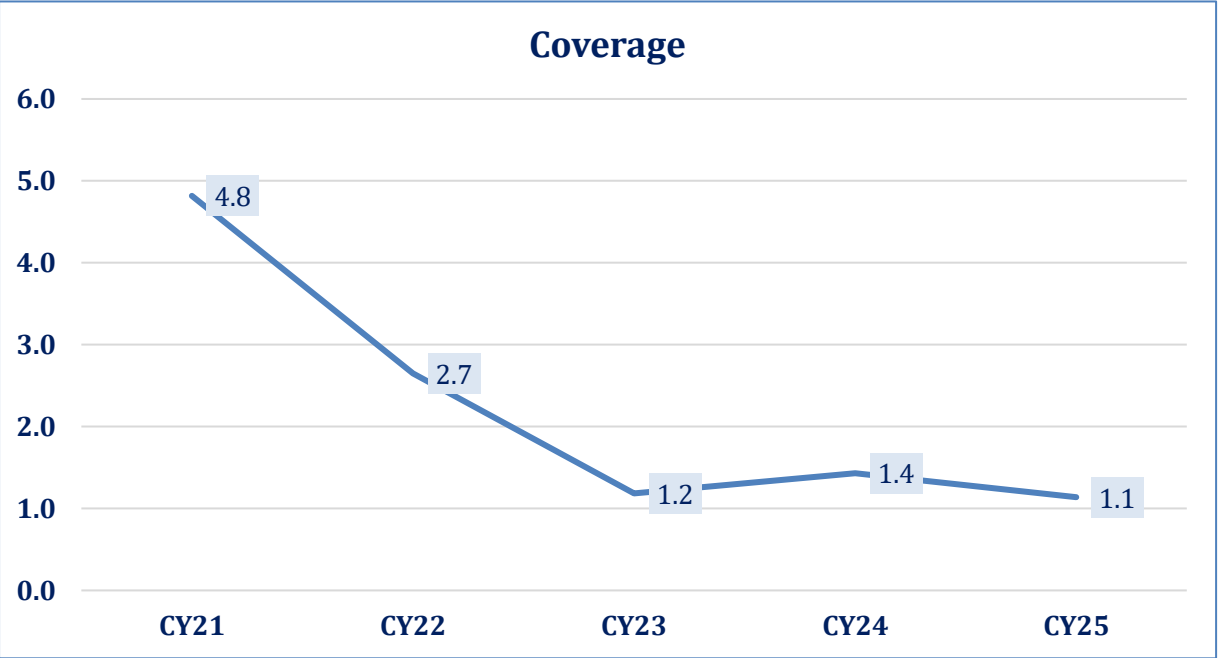
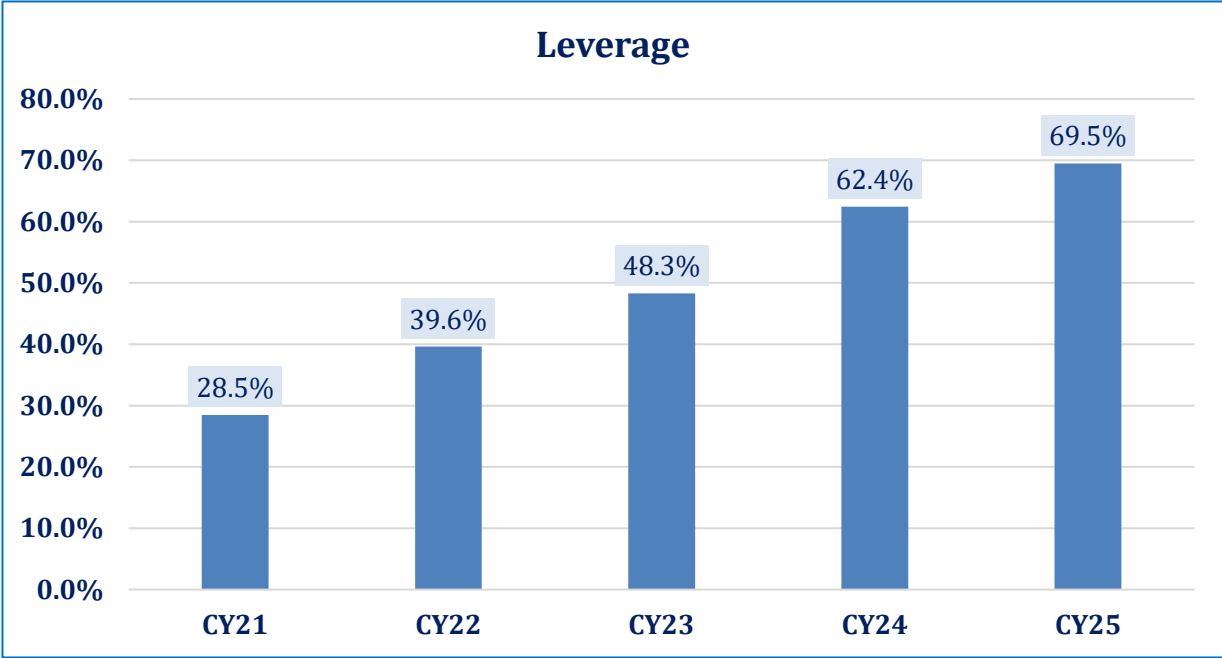
**Cost of Goods Breakdown**



# Telecommunication

## Local | Financial Risk

- Sector leverage increased from ~62.4% in CY24 to ~69.5% in CY25, primarily due to PTCL's acquisition of Telenor Pakistan and Orion Towers. To finance the transaction, PTCL drew down a USD~400mn loan facility arranged with IFC and partner lenders in December 2025, adding PKR~112bn in new borrowings. As the increase in debt was linked to this one-off acquisition rather than routine operations, the rise in sector leverage reflects acquisition financing rather than a broad deterioration in the telecom sector's financial health.
- At the same time, interest coverage weakened from ~1.4x to ~1.1x in CY25 partly due to a ~76.5% fall in other income of a major Sector Player. This decline was largely driven by a one-off interim dividend received in the prior year that did not recur, along with a drop in finance income. As a result, coverage fell despite strong core operating performance. Coverage may recover modestly toward ~1.2–1.3x if other income normalizes, but elevated borrowings post-spectrum auction will likely keep coverage compressed near ~1.1–1.2x.

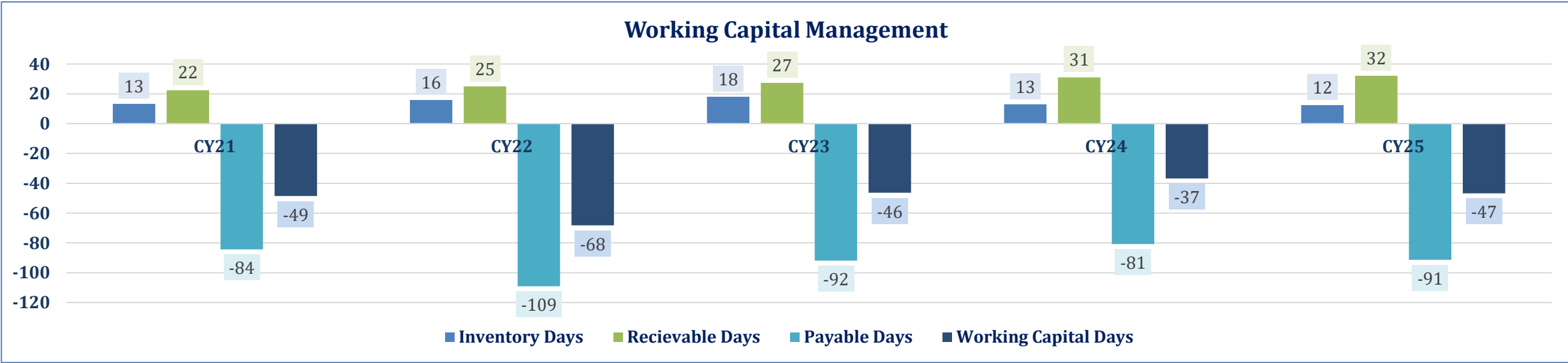


*Note: Calculations are based on ~2 PACRA/Listed Clients.*

# Telecommunication

## Local | Financial Risk

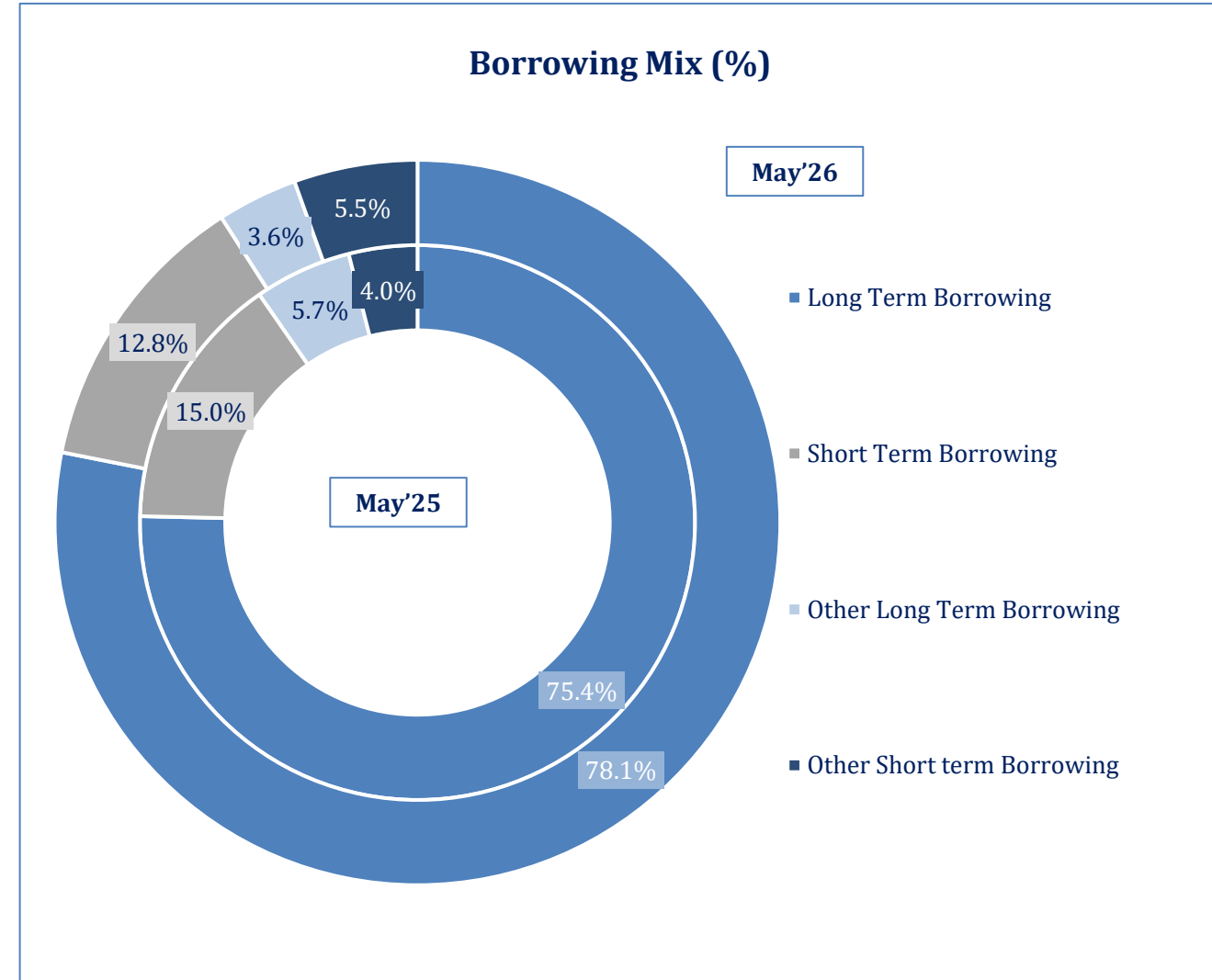
- The telecom sector continued to operate with a structurally negative working capital cycle (~-47 days in CY25), supported by its subscription-based business model and strong supplier financing. Inventory days remained low at ~12 days (CY24: ~13 days), reflecting minimal holdings of SIM cards, handsets, and network equipment.
- Receivable days increased marginally to ~32 days from ~31 days, driven by postpaid subscribers, corporate customers, and interconnect settlements. Payable days remained significantly higher at ~91 days (CY24: ~81 days), reflecting extended credit terms from equipment vendors, installment-based spectrum payments, and other supplier financing arrangements.
- As a result, working capital days became more negative, improving from ~-37 days in CY24 to ~-47 days in CY25. Overall, the sector's high payable days more than offset the cash tied up in receivables and inventory, enabling operators to finance operations through supplier credit rather than internal cash. While this is a structural strength of the Telecom Sector, the increase in payable days also indicates greater reliance on supplier financing to support ongoing network investments.



# Telecommunication

## Local | Financial Risk

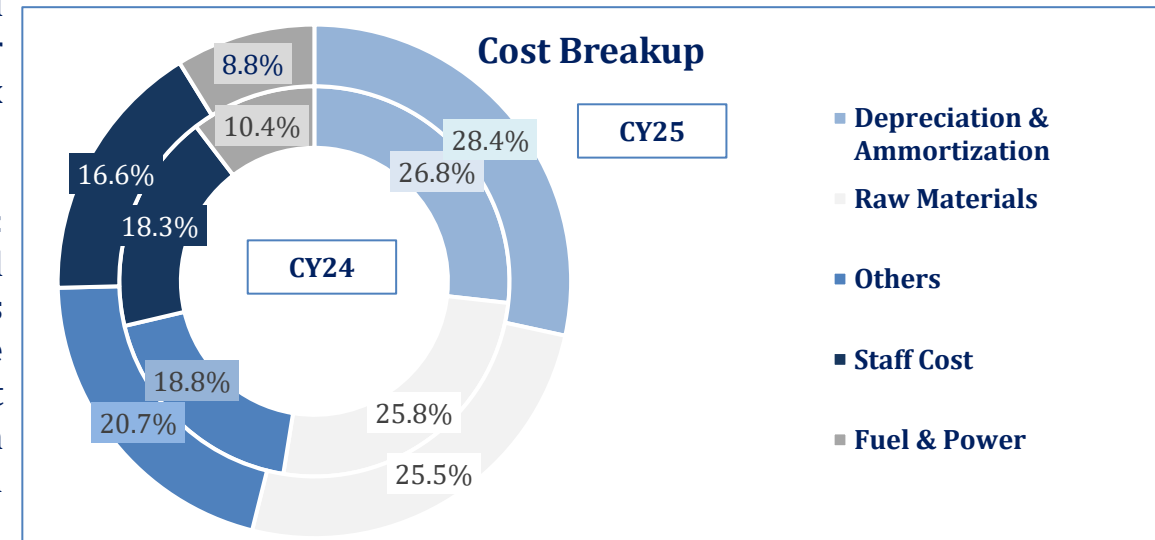
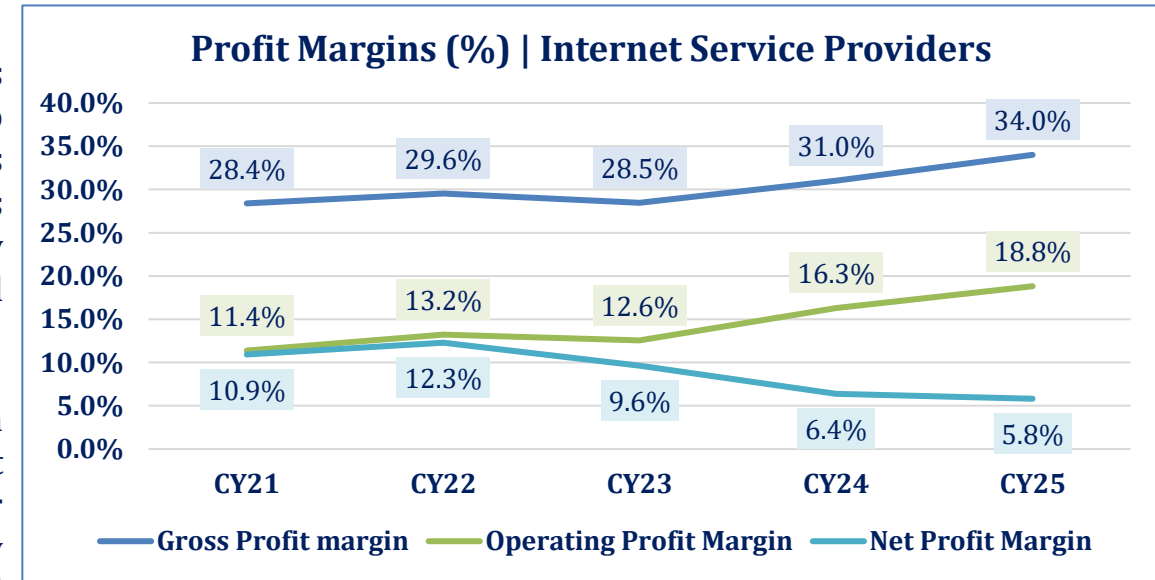
- The Telecom Sector's borrowing profile remained largely unchanged between May'25 and May'26, with long-term borrowings continuing to dominate the debt mix. The share of long-term borrowings increased to ~78.1% in May'26 (May'25: ~75.4%), while short-term borrowings declined to ~12.8% (May'25: ~15.0%).
- The limited reliance on short-term borrowing is consistent with the segment's negative working-capital cycle as operators collect from customers and hold prepaid balances, before paying suppliers, day-to-day operations require little external short-term funding.
- Meanwhile, other long-term borrowings decreased to ~3.6% (May'25: ~5.7%), whereas other short-term borrowings increased marginally to ~5.5% (May'25: ~4.0%). The continued preference for long-term financing suggests operators are funding capital-intensive investments, such as network expansion and spectrum-related obligations.



# Telecommunication

## Local | Internet Service Providers

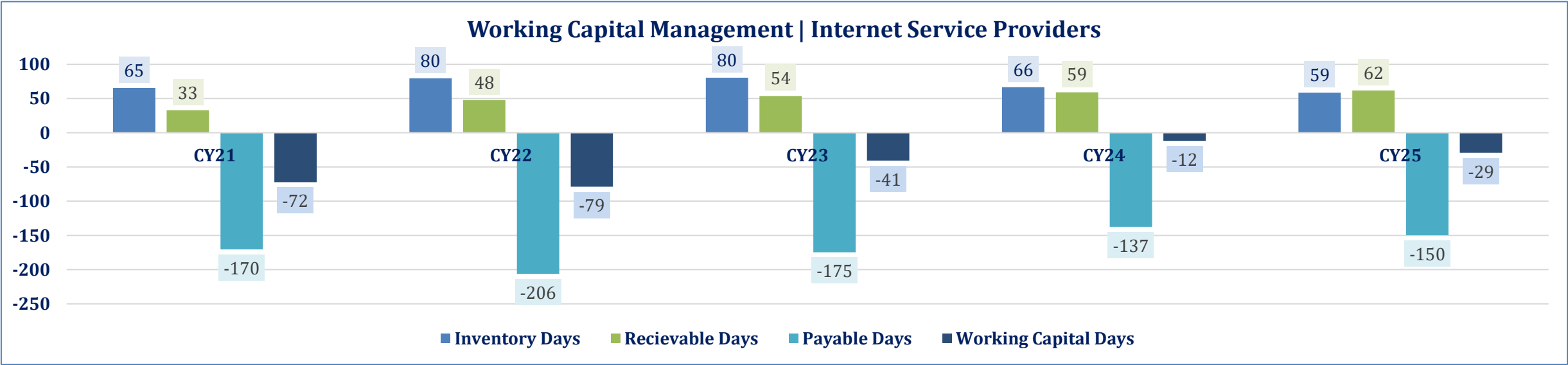
- Gross margin improved to ~34.0% in CY25 (CY24: ~31.0%). The gain was driven by sales rising ~12.8% while cost of services grew only ~7.8%, so revenue outpaced direct costs. The faster revenue growth mainly reflects repricing and higher average revenue per user. At the same time, direct costs stayed contained as the largest items, depreciation and bandwidth (raw materials), rose only modestly and interconnect and fuel & power remained broadly flat.
- Operating margin improved to ~18.8% in CY25 (CY24: ~16.3%), as growth in sales and gross profit was retained after accounting for operating expenses. Net margin, however, eased to ~5.8% in CY25 (CY24: ~6.4%), indicating that higher non-operating expenses partly offset these operating-level gains. This broadly mirrors the trend of PTCL, a major Sector player, where one-off acquisition and pension-related charges weighed on bottom-line profitability despite stronger core operating performance. A significant contributor was a sharply higher tax burden as PTCL's effective tax rate rose to ~77.7% in FY25 (FY24: ~29.9%).
- The Sector's cost base is diversified with depreciation and amortization (CY25: ~28.4%; CY24: ~26.8%), raw materials (CY25: ~25.5%; CY24: ~25.8%), and staff costs (CY25: ~16.6%; CY24: ~18.3%) comprise major cost components followed by fuel and power. Depreciation takes the largest share because operators must physically wire each premise with fiber, and that heavy upfront spending is charged gradually over time. Raw materials mainly reflect bought-in international bandwidth, the wholesale capacity operators purchase and resell to customers, making it the second-highest cost.



# Telecommunication

## Local | Internet Service Providers

- Internet Service Providers (ISPs) maintained a negative working capital cycle in CY25, although their working capital structure differs from the broader telecom Sector due to the nature of fixed broadband operations. Inventory days declined from ~66 to ~59 days, reflecting improved inventory management or slower customer installations. ISPs maintain higher inventories of modems, routers, and other customer-premises equipment.
- Receivable days increased slightly from ~59 to ~62 days, driven by the Sector's greater exposure to enterprise and corporate customers, who typically operate on longer credit terms than prepaid mobile subscribers. Payable days increased from ~137 to ~150 days, indicating continued reliance on extended supplier credit to finance network expansion and infrastructure investments. This enabled the Sector to maintain a negative working capital cycle despite its relatively higher inventory and receivables.
- Overall, working capital days improved from negative ~12 to ~29. Unlike mobile operators, which achieve negative working capital through low inventory and prepaid revenues, ISPs rely more heavily on supplier financing to offset the higher working capital requirements of their fixed broadband business.

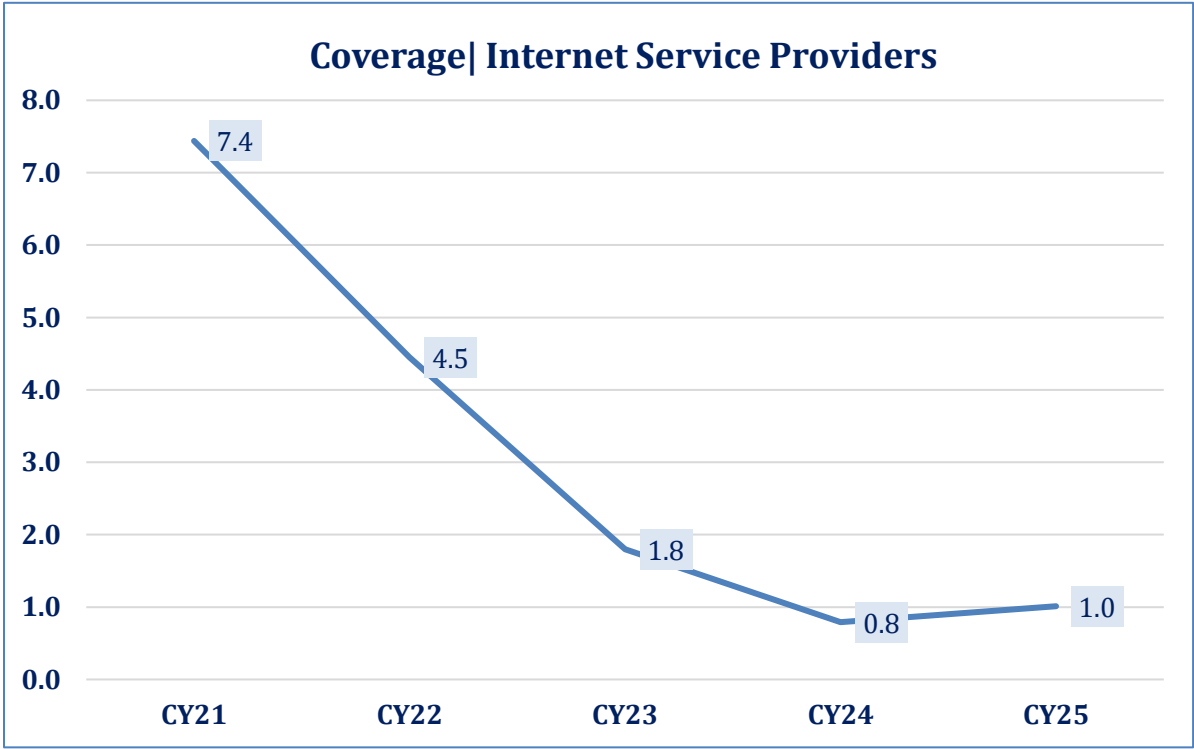
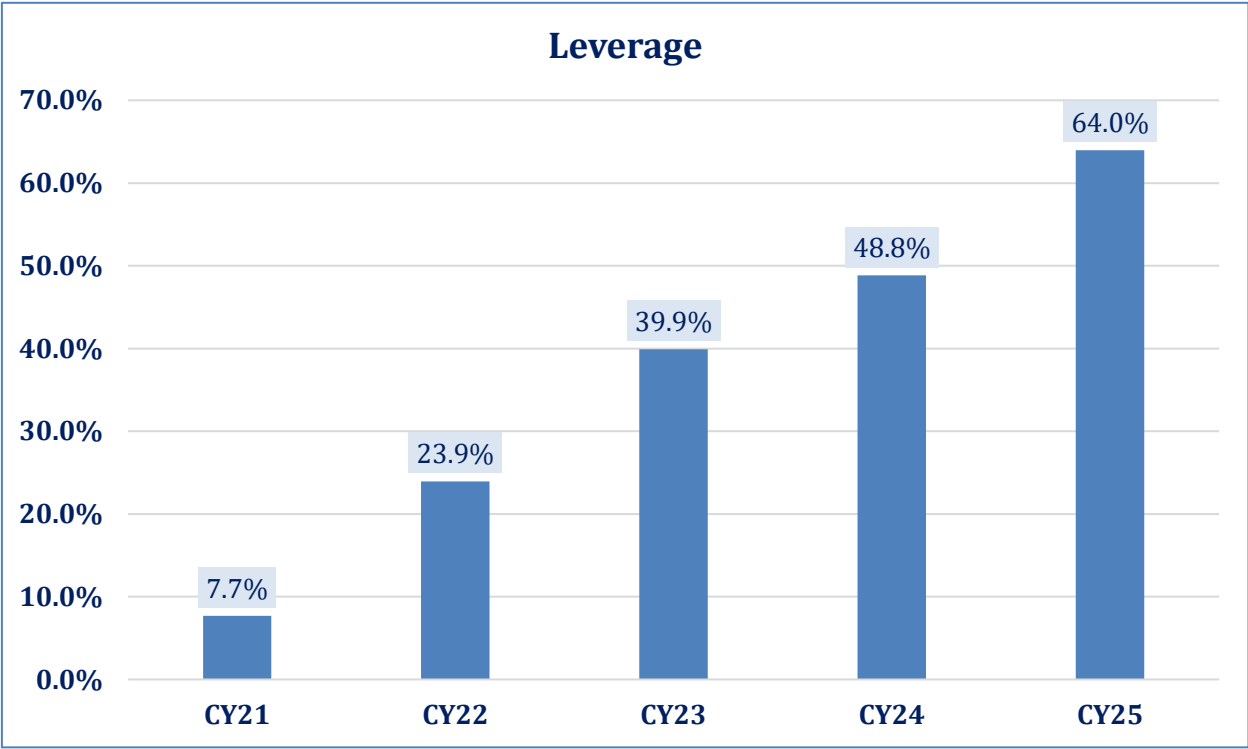


*Note: Calculations are based on ~4 PACRA-rated/ listed players.*

# Telecommunication

## Local | Internet Service Providers

- Leverage for the Internet Service Providers Segment increased from ~48.8% in CY24 to ~64.0% in CY25, primarily due to the acquisition of Telenor Pakistan. The transaction was financed through debt and also resulted in significant one-off acquisition and pension-related costs..
- Interest coverage improved slightly from ~0.8x to ~1.0x, reflecting a modest recovery in operating earnings. However, coverage remains weak, with operating profits only just sufficient to meet interest obligations. Overall, the higher leverage largely reflects the one-off impact of the Telenor acquisition rather than underlying operational weakness, although the Sector continues to have a thin earnings cushion to comfortably service its debt.

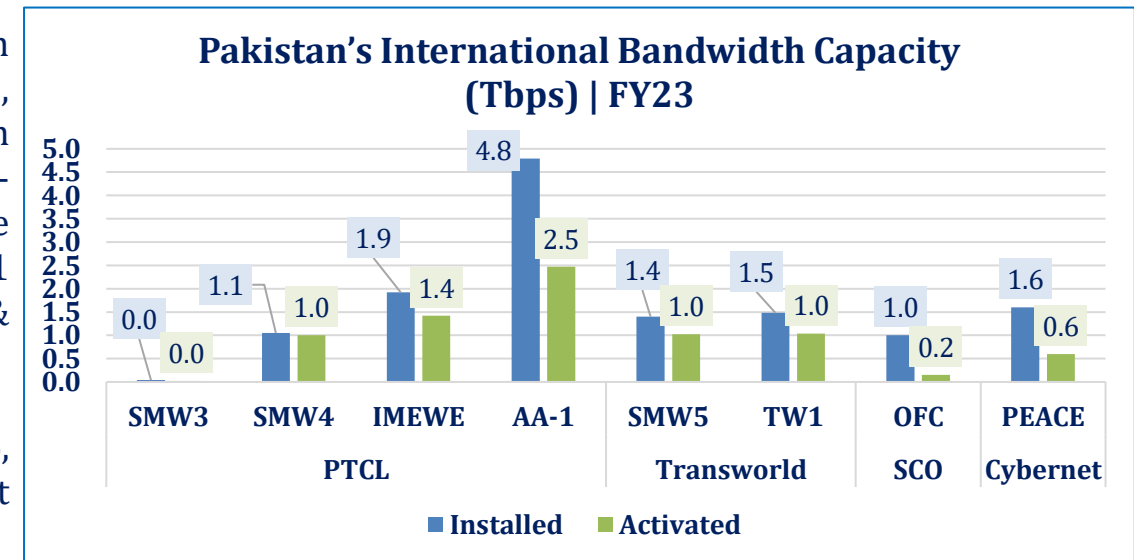
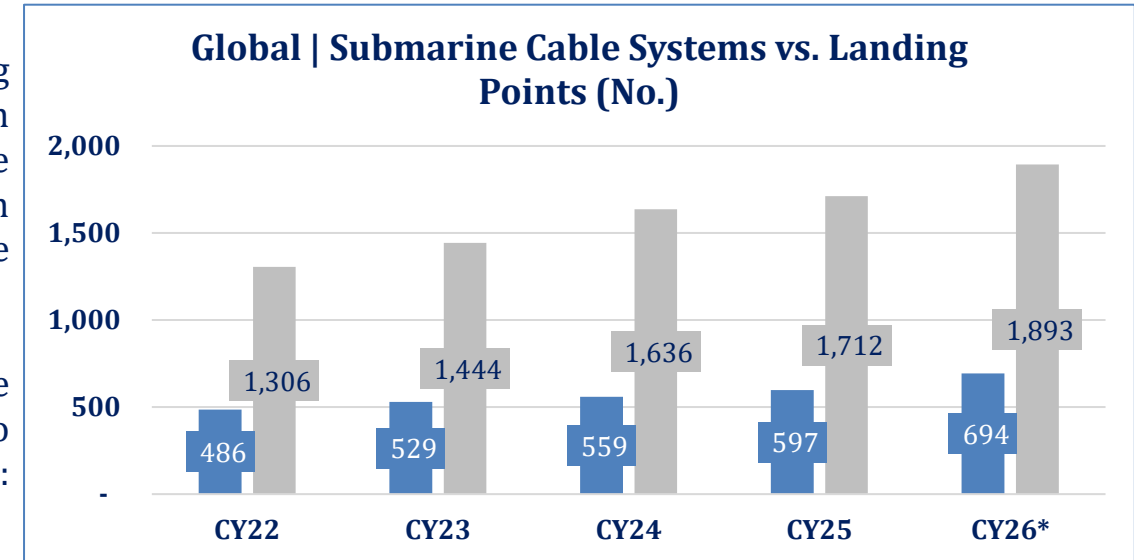


*Note: Calculations are based on ~4 PACRA-rated/ listed players.*

# Telecommunication

## Submarine Cables | An Overview

- Global submarine cable infrastructure has expanded steadily to support rising data demand. The number of submarine cable systems increased from ~597 in CY24 to ~694 in CY26 while landing points rose from ~1,712 to ~1,893. Cable lengths vary significantly, ranging from short-haul routes such as the ~131 km CeltixConnect cable between Ireland and the UK to long-haul systems like the ~20,000 km Asia America Gateway.
- As of FY26, Pakistan's telecom infrastructure comprises ~07 submarine cable connections and a Pak-China Optic Fiber Cable (OFC), enabling access to international Internet bandwidth having a total capacity of ~17.7Tbps (FY23: ~13.3Tbps) (of which, activated capacity stands at ~7.7Tbps).
- Key players in Pakistan's international bandwidth provision include Pakistan Telecommunication Company Limited (PTCL), Transworld Associates (TWA), Cyber Internet Service Providers (Cybernet) and Special Communication Organization (SCO). These serve as landing points for AAE1 (Asia Africa Europe-1), IMEWE (India-Middle East-Western Europe), SMW4 (South East Asia-Middle East-West Europe 4), SMW3 (Sea-Me-We 3), SMW5 (SEA-ME-WE 5), TWA1 (connecting United Arab Emirates, Oman, and Pakistan) and PEACE (Pakistan & East Africa Connecting Europe) submarine cables.
- As of FY26, four more high-capacity submarine cable systems (Africa-1, SMW-6, 2Africa, and the Makran Gulf Gateway) are in the pipeline, set to further boost Pakistan's bandwidth capacity and network redundancy.



\*CY26 reflects data as of March 2026.

**Note:** International Bandwidth Capacity data latest available as of FY23

Source: TeleGeography, PTA, Submarine Networks, PEACE Cable

# Telecommunication

## Regulatory Framework & Updates

**Pakistan Telecommunication Authority:** The Pakistan telecommunication Ordinance 1994, established the primary regulatory framework for the telecommunication Sector including the establishment of an authority. Thereafter, telecommunication (Re-Organization) Act no XVII was promulgated in 1996 that aimed to reorganize the Telecom Sector of Pakistan. Under Telecom Reorganization Act 1996, Pakistan Telecommunication Authority (PTA) was established to regulate the establishment, operation and maintenance of telecommunication systems, and the provision of telecom services.

**5<sup>th</sup> Generation Regulator:** PTA has been retained by the International Telecommunication Union (ITU) as a G5 Regulator - Advanced Level, ranking among the world's most advanced telecom regulators.

**National Cyber Security Policy (NCSP):** Cyber Security is one of the highest priority areas of the present government. Through extensive efforts of the Ministry of Information Technology and Telecommunication (MIOTT), Government of Pakistan (GoP) and PTA have successfully implemented the National Cyber Security Policy 2021 with a focus of establishing a secure digital ecosystem. Under the policy the regulatory body is trying to identify and implement the legislative and regulatory reforms in accordance with the security mandates defined under the policy to enable the stakeholders a safe, secure, reliable and resilient digital services.

### Telecom Infrastructure Sharing Framework (TISF) | Nov'23

- The Framework provides a regulatory mechanism for licensees to share their active as well as passive telecom infrastructure in a fair and competitive manner.
- It is expected to lead to significant reductions in the cost of deploying (CapEx) and operating (OpEx) telecom networks, which will ultimately benefit consumers in the form of lower prices and better as well-enhanced services.
- Factors that paved the way for said Framework included increasing inflation, low Average Revenue Per User (ARPU), rising fuel prices, revenue challenges, massive CapEx demand for 4G & 5G expansion, connecting remote areas, and cost-effective capacity growth for nationwide coverage.

# Telecommunication

## Regulatory Framework & Updates

**National Fiberization Plan:** PTA, in collaboration with MoITT, is advancing the National Fiberization Plan under the World Bank-supported Digital Economy Enhancement Project (DEEP). This commenced officially in March 2026. The plan is aimed at expanding optical fiber deployment, enhancing fixed broadband penetration, and supporting 5G and emerging digital services. The plan emphasizes streamlined Right-of-Way approvals, rationalization of charges toward zero cost, infrastructure sharing, and private Sector investment, with a focus on underserved and rural areas. As of mid-2025, ~228,940 km of fiber optic cable had been deployed nationwide.

### Other Policies applicable to the Sector include the following:

- Deregulation (Jul'03)
- Mobile Cellular Policy (Jan'04)
- Broadband Policy (Dec'04)
- Policy Directive for Spectrum Auction for Next Generation Mobile Services in Pakistan (Oct'13)
- Policy Directive for the Unsold Next Generation Mobile Services (NGMS) Spectrum in Pakistan 2016 (Apr'16)
- Policy Directive under Section 8(2) of the Pakistan Telecommunications (Re-organization) Act 1996 for Renewal of Cellular Mobile Licenses in 2019 (May'19)

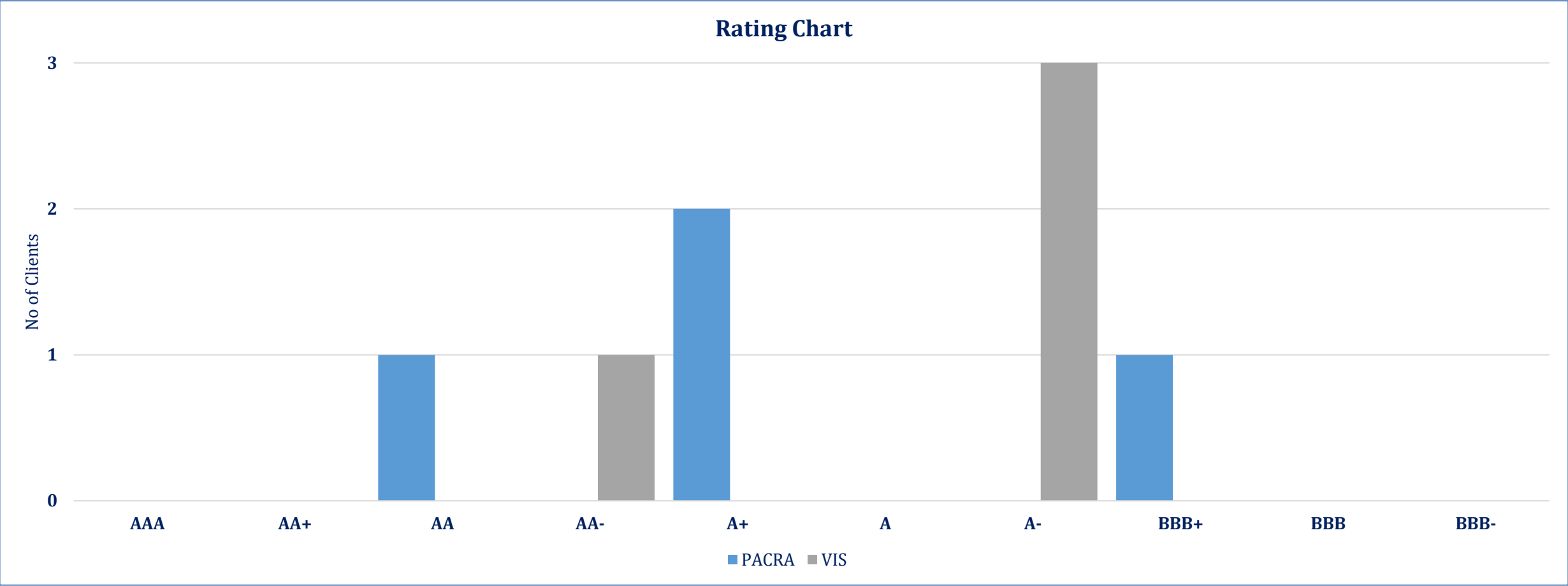
### Recent Updates

- PTCL entered into a Share Purchase Agreement with Telenor Pakistan (Pvt.) Ltd., for acquisition of 100% shareholding amounting to PKR~108bn (or USD~385mn), on a cash-free debt-free basis.
- The International Finance Corporation (IFC) has approved the debt financing up to USD ~400mn to PTCL for acquisition of TPL.
- The FY27 budget (Finance Act 2026) offered the Sector limited relief. The maximum super-tax rate was reduced to ~8% from ~10% for companies with income exceeding ~PKR 500mn, and abolished for income up to ~PKR 500mn, offering modest relief to larger, profitable operators.
- The withholding-tax rate on services under Section 153(1)(b) was raised to ~7% from ~6%, and as it remains largely within the minimum-tax regime, it continues to weigh on operators' cash flows.
- The ~15% advance income tax and GST on telecom services remained in place, keeping affordability and average revenue per user under pressure.

# Telecommunication

## Rating Chart

- PACRA rates 4 entities in the Sector. Rating bandwidth of the Sector is BBB+ to AA. Whereas, PACRA also rates 2 debt Instruments. Rating band width is A+ to AA.



# Telecommunication

## SWOT Analysis

- Large subscriber base with rising 3G/4G-capable device penetration.
- Providing business-critical connectivity and resilience. Facilitating growing work-from-home or freelance working arrangements.
- High barriers to entry, reinforced by capital-intensive spectrum and infrastructure requirements
- Synergetic impact of financial services offered by telecom industry (e.g. branchless banking)

- Requirement of significant capital expenditures for new technology.
- Price competition amongst industry players exerts pressure on average revenue per user.
- Conflicts related to license renewal fee charge.



- Lack of accessibility in remote regions.
- Less spending on research and development.
- Privacy Issues- Cyber Crime
- Interconnection problems for small players.
- Low ARPU

- Monetizing newly acquired 5G spectrum (~480 MHz secured, March 2026 auction) through premium data plans and enterprise/FWA use cases.
- Rising data consumption, including AI-driven demand, supporting continued ARPU growth.
- Fiber/backhaul expansion under the National Fiberization Plan, closing the gap to the 80%-by-2029 target.

# Telecommunication

## Outlook: Stable

- In FY26, Pakistan's GDP (nominal) stood at PKR~126.9Tn, increasing ~11.3% YoY (FY25: ~8.3% growth), reflecting a marked pickup in overall economic activity. The Services segment held ~58.4% share in GDP during the year, followed by Industrial activities at ~18.1% and Agriculture at ~23.5%. The Telecommunication Sector, which falls under the Services segment, contributed ~3.0% of value addition within Services during the period. Looking ahead, IMF projects Pakistan's real GDP growth at ~3.6% for FY26, before easing marginally to ~3.5% in FY27.
- Subscriber growth is expected to moderate as the market approaches saturation, with the subscriber base reaching ~206.0mn and tele-density rising to ~83.0% (11MFY26). While 3G/4G-enabled devices increased from ~65.0% in FY24 to ~71.0% in FY25, adoption has slowed, edging up only to ~71.6% by 11MFY26. Future growth is therefore expected to come primarily from higher data usage rather than new subscriber additions or device upgrades.
- Following the March 2026 spectrum auction, operators are expected to maintain elevated capital expenditure to meet phased rollout obligations. The PKR ~142bn spectrum investment will support 5G deployment over the coming years. Historically, device affordability and the pace of smartphone/4G-device penetration have lagged network rollout in Pakistan, so the pace of subscriber conversion to 5G will determine how quickly this investment translates into returns.
- Sector revenue rose from ~PKR~803bn (9MFY25) to ~PKR~837bn (9MFY26), a ~4.2% increase YoY. Going forward, growth is expected to rely more on higher data consumption, enterprise services, and pricing discipline following market consolidation, rather than further price-led ARPU gains.
- Operating profitability is expected to remain resilient, supported by improved pricing and scale. However, leverage is likely to remain elevated after increasing to ~69.5% in CY25, reflecting acquisition-related borrowings and continued network investments. Interest coverage, at ~1.1x in CY25, is expected to remain under pressure as operators absorb higher debt servicing costs as leverage increased.
- Operators are increasingly relying on long-term domestic borrowings, which accounted for ~78.1% of total debt by May'26 (May'25: ~75.4%), reducing refinancing risk but keeping leverage elevated. Foreign investment is expected to remain subdued following net FDI outflows of USD~551mn during 11MFY26, largely reflecting Telenor's exit. The Sector's outlook will depend on the pace of 5G rollout, regulatory approval of tariff adjustments, successful integration of Telenor into PTCL, and exchange rate stability, which will influence financing costs and overall profitability.

# Telecommunication

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