



Bangladesh's 5G moment: promise, challenges, and the road ahead

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This is true, but it misses the broader point. Telecommunications infrastructure is not a luxury; it is an enabling layer on which digital commerce, e-governance and industrial automation depend. Taxing it punitively is akin to imposing tolls on roads so high that freight costs become uncompetitive. Receipts may flow into the exchequer, but the wider economy suffers.

THE DEVICE GAP: NETWORK WITHOUT TERMINALS

Even if the regulatory burden were eased, Bangladesh faces a more immediate bottleneck: the scarcity of handsets capable of connecting to 5G networks. According to BTRC data, local manufacturers produced 1.08 lakh 5G-enabled devices in October 2025, up from 63,000 units in September, marking the second time since June 2024 that monthly production has crossed the one-lakh threshold. Yet despite this uptick, 5G devices accounted for only 4.74% of the total 22.81 lakh handsets manufactured in Bangladesh that month. Feature phones continue to dominate production with a 61.21% share, while 4G handsets account for 34.29%.

Industry estimates suggest that only 6.6% of smartphones currently in use across the country are 5G-compatible. About 62% of devices nationwide are smartphones, most of which remain 4G-enabled. Imported and expatriate-gifted handsets make up roughly 50% to 60% of the smartphone market. Many are high-end 5G-ready devices, though a significant portion consists of refurbished models.

The economics are stark. Average monthly revenue per user in Bangladesh hovers around \$2, while a 5G-capable smartphone typically costs \$300 to \$400. Even mid-range

The stakes extend beyond bragging rights. Fifth-generation networks are designed not merely to offer faster mobile broadband but to enable qualitatively different applications, including ultra-reliable low-latency communications for industrial automation, network slicing for dedicated enterprise services, and massive machine-type communications for the internet of things. These capabilities matter for manufacturing competitiveness, logistics efficiency and the ability to attract foreign direct investment in technology-intensive sectors.

The scale of infrastructure required to support these ambitions is considerable. National bandwidth consumption in Bangladesh currently stands at about 35 terabytes and is projected to reach 50 terabytes by year's end, with demand expected to grow four to fivefold over the next five years. Meeting this demand will require substantial backbone investment beyond the wireless access layer.

For Bangladesh, whose garment industry faces mounting pressure from automation trends in competitor countries, the question is whether 5G-enabled smart manufacturing can be achieved before the window of demographic dividend closes. The country's fibre-optic backbone has expanded from 37,000 kilometres in 2015 to about 142,000 kilometres today, and 4G coverage now reaches 95% of the population. Yet only 23% of industrial zones are connected to fibre, and electricity supply remains intermittent, with urban areas experiencing two to three hours of daily outages and rural regions facing four to six hours.

THE STRETCHED REALITY OF A SMARTER NATION

Over the next 15 years, Bangladesh has aimed to become a high-income, knowledge-based economy characterised by full digitisation of

5G guidelines, promised after the 2022 spectrum auction, were not finalised until 2024 and omitted clear rollout obligations. Operators that paid \$1.23bn for spectrum were left without certainty on deployment timelines or coverage requirements. The interregnum allowed "ecosystem readiness" arguments to become self-fulfilling: without clear deadlines, neither operators nor device manufacturers had strong incentives to accelerate preparations.

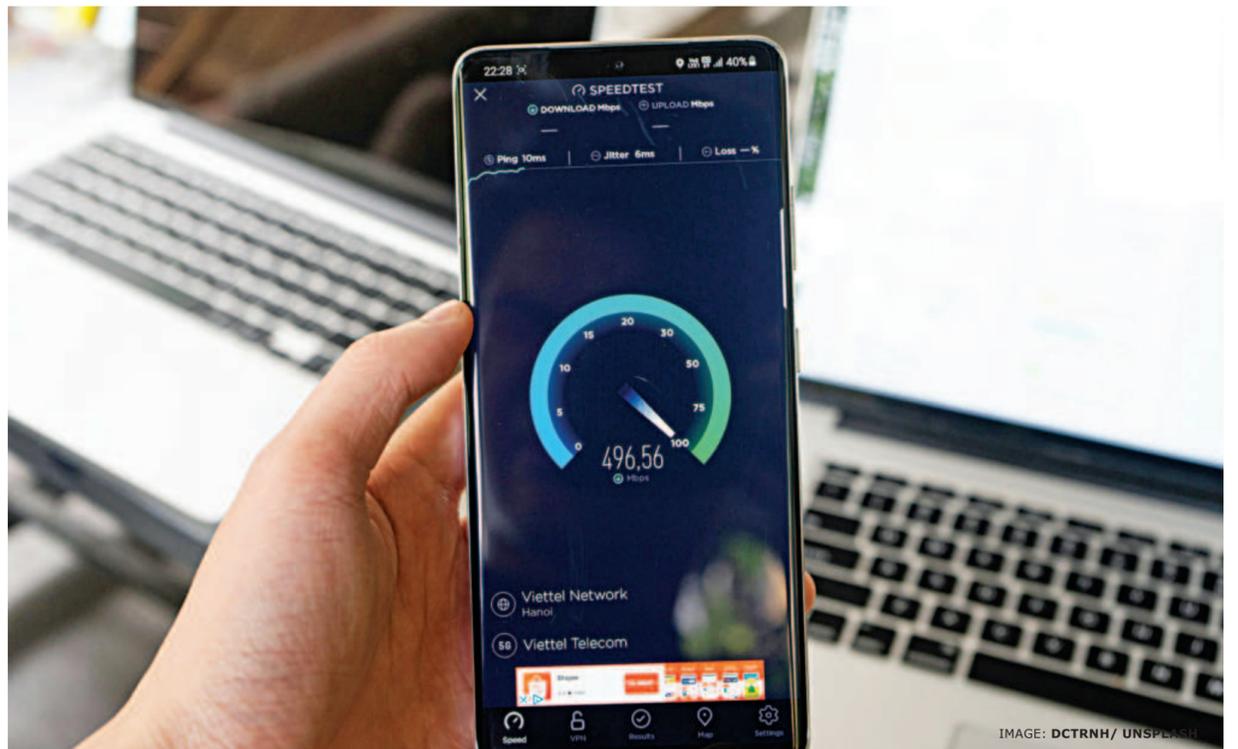
WHAT NEEDS TO CHANGE

If Bangladesh is serious about harnessing 5G for national competitiveness rather than merely ticking a box on the technology adoption checklist, several interventions appear necessary. First, the fiscal burden on the telecommunications sector requires urgent recalibration. Spectrum pricing should be anchored to present-day market fundamentals rather than used primarily as a revenue-maximisation tool. Exempting or relaxing VAT on spectrum fees, and streamlining sector-specific taxes, deserves careful consideration.

Second, device affordability must be addressed through a combination of reduced import duties on 5G-capable handsets and further incentives for local assembly. Without a critical mass of compatible devices, network investments will yield diminishing returns.

Third, regulatory clarity is essential. Operators need long-term licences with predictable renewal terms and local-currency payment options to reduce foreign exchange risk. The timely release of additional spectrum bands, particularly the 700 MHz and 3.5 GHz frequencies identified for 5G expansion, should be prioritised. The 700 MHz band is already in the pipeline, which is progress.

The need for streamlined procurement



4G devices command prices of about \$150.

Operators such as Robi have acknowledged this reality, noting that its initial rollout prioritises areas where 5G device penetration already reaches 12% to 15%, with 120 areas approaching nearly 20% penetration. Most of these imported and gifted handsets registered on its network are compatible with 5G. Nevertheless, according to Robi's estimates, it may take five to seven years for 5G adoption to reach current 4G levels, as affordability and broader economic factors remain key constraints. This is a pragmatic assessment, but it also underscores the risk of 5G becoming a service for the affluent few rather than a platform for mass digital participation. With the National Equipment Identity Register (NEIR) initiative, the government system to verify every mobile handset on Bangladesh's telecom networks, the number of informally brought 5G-enabled phones on the network is expected to fall further.

THE REGIONAL CONTEXT: FALLING BEHIND NEIGHBOURS

Bangladesh's 5G trajectory cannot be assessed in isolation. Across South Asia and the wider Indo-Pacific, the race to deploy next-generation connectivity has become a marker of technological ambition. India's 5G rollout, launched in October 2022, has been among the fastest globally, underpinned by aggressive spectrum allocation and regulatory clarity. By March 2025, the country had deployed roughly 469,000 5G base stations and connected more than 250 million active users. Even smaller economies such as Bhutan and the Maldives have achieved commercial 5G deployments in selected areas.

government services, universal smartphone access, and an ICT sector contributing 20% to GDP.

Such aspirations are not inherently unrealistic. Bangladesh has demonstrated resilience and adaptive capacity in its development journey, repeatedly confounding sceptics who doubted its ability to transcend the circumstances of its birth. The government's infrastructure

Bangladesh's belated entry into the fifth-generation era raises fundamental questions about digital strategy, regulatory burdens, and the gap between ambition and execution.

initiatives reflect both the scale of ambition and the challenges of execution. BTCL's BDT 1,059 crore 5G network expansion project, launched in 2022, aims to establish fibre capacity of 100 Gbps at upazila level, 300 Gbps at district headquarters, and up to 1,000 Gbps in metropolitan areas. Upon completion, the state-owned operator would supply about 11,250 Gbps, representing 30% of projected national bandwidth requirements for the coming decade. Such investment is essential if Bangladesh is to avoid a bandwidth bottleneck as 5G adoption accelerates.

Yet there remains a persistent gap between policy pronouncements and delivery. The

and governance is equally pressing. State-owned BTCL's 5G backbone project, currently around 50% complete and pending a technical assessment by BUET faculty, exemplifies how procurement disputes and regulatory uncertainty can delay critical infrastructure. The project's equipment, supplied by Huawei at BDT 326 crore, faced port clearance delays following an Anti-Corruption Commission inquiry into tender procedures. Due diligence is necessary, but protracted investigations that halt infrastructure deployment impose their own costs on national competitiveness.

Fourth, and perhaps most fundamentally, 5G deployment must be conceived as part of broader ecosystem development. This includes accelerating fibre connectivity to industrial zones, ensuring reliable electricity supply, building digital literacy through education reform, and developing use cases in priority sectors such as healthcare, agriculture and manufacturing that justify enterprise investment in 5G-enabled solutions.

Bangladesh stands at a familiar crossroads. The technology has arrived, albeit late. The potential is evident, if not yet realised. The question now is whether policymakers will treat 5G as a genuine enabler of economic transformation or allow it to become another instance of infrastructure serving the already connected while leaving the majority behind. For 5G to fulfil its promise, Bangladesh must address the regulatory, fiscal and infrastructural constraints that have historically impeded the translation of technological potential into broad-based development gains. The alternative is a future in which the country's digital aspirations remain perpetually just beyond reach.