TV RAMACHANDRAN

BEYOND MOBILE: FIXING INDIA'S AFFORDABLE BROADBAND CHALLENGE

How PM-WANI and fibre-based broadband can unlock digital connectivity, slash broadband costs for millions of Indians.

India is on an ambitious journey to achieve comprehensive digital inclusion and equitable broadband access for all citizens. However, the country's overall Internet density—comprising both narrowband and broadband connections—stands at approximately 69%, with rural connectivity notably lower at 45%.

Given India's demographic composition, this suggests that a substantial portion of the population remains digitally excluded, largely due to affordability constraints. The urban–rural digital divide has remained between 65% and 70% over the past four to five years, indicating limited progress and necessitating a critical reassessment of the current connectivity landscape.

WHY MOBILE TARIFFS MISS THE AFFORDABILITY MARK

India's broadband landscape remains predominantly mobile-centric, which results in suboptimal data utilisation and higher per-unit consumer costs. However, there is limited public awareness of these implications.

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Transitioning towards or complementing mobile broadband with more sustainable, high-quality and economically efficient solutions such as fibre-based fixed broadband (FBB), particularly through initiatives like PM-WANI, can substantially boost data usage and enhance inclusive digital growth.

According to the Telecom Regulatory Authority of India's (TRAI) Performance Indicator Report for October–December 2024, the average revenue realisation per GB of wireless (mobile) data stands at Rs 9.34. The average monthly mobile data usage per subscriber is 21.52 GB, resulting in an annual cost of approximately Rs 2,850 (inclusive of GST). In comparison, a prepaid data pack priced at Rs 249 with a 28-day validity (1 GB per day) costs about Rs 3,246 annually. Another plan offering 25 GB per month costs approximately Rs 4,260 per month.

Assessing affordability through the lens of income levels is crucial. The World Inequality Report highlights India as one of the most economically unequal countries globally, with the average annual income of the bottom 50% of the population at Rs 71,163. The United Nations Broadband Commission for Sustainable Development sets a target for affordable broadband in low and middle-income countries at less than 2% of monthly Gross National Income per capita.

This benchmark implies the bottom half of India's population should spend no more than Rs 1,425 per year on broadband. Current mobile broadband tariffs significantly exceed this threshold. Moreover, affordability worsens with lower-denomination packs, which offer disproportionately limited data, resulting in a substantially higher cost per GB. For example, packs priced at Rs 161 for 12 GB (Rs 13.41/GB), Rs 121 for 6 GB (Rs 20/GB) and Rs 22 for only 1 GB force lower-income users into disproportionately expensive choices, going against the goal of affordability.

This non-affordability has a significant impact on subscriber churn and retention, as evidenced by the net subscriber reductions following tariff hikes in the past year. This situation highlights the persistent rural-urban digital divide, driven by tariff increases, which discourages new subscriptions and prompts existing users to restrict their usage or disconnect entirely.

Although India predominantly relies on mobile broadband, affordability remains out of reach for half its population. Stagnant tele-density and Internet density reveal systemic inefficiencies, indicating that current mobile-based tariff structures fail to sufficiently incentivise broadband adoption, especially among rural and economically disadvantaged groups. Clearly, price elasticity in mobile broadband is a challenge for India's financially underprivileged populations.

Mobile broadband data rates per GB are inherently more expensive compared to fibre-based broadband, primarily because mobile data packs are limited. In contrast, fixed broadband with Wi-Fi routers generally provides unlimited data usage.

FBB + PUBLIC WI-FI = A COST-EFFECTIVE ALTERNATIVE

A brief examination of fixed broadband tariffs illustrates significant affordability advantages. A PSU service provider offers plans starting at Rs 399 per month for speeds of up to 30 Mbps (1,400 GB at full speed, with unlimited data thereafter at lower speeds). In contrast, a private operator offers unlimited data at 40 Mbps for Rs 499 per month.

Though comprehensive data on fixed broadband traffic is not reported, TRAI's Draft TTO (71st amendment) estimates average FTTH data usage at 200-500 GB per month per subscriber. This indicates fixed broadband usage per subscriber is 10 to 25 times higher than mobile broadband. Consequently, the effective cost per GB for FBB users is approximately Rs 1-2, significantly lower than the Rs 9.34 per GB for mobile broadband.

Globally, fixed broadband dominates Internet usage, accounting for about 83% of global Internet traffic, according to the ITU's 2023 report. However, India's reliance on mobile broadband starkly contrasts with these global trends. It is no wonder that India's mobile broadband contributes only about 3% to global broadband traffic, highlighting significant underutilisation and limited

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broadband penetration, as India is a mobile-centric country. This would not help meet India's ambitious digital goals.

Given these economic advantages, public Wi-Fi via fibre-based fixed broadband emerges as a crucial solution for India, which can deliver affordable Internet access to unconnected and economically disadvantaged populations. Globally, many countries have successfully used public Wi-Fi and fibre infrastructure to drive economic and digital inclusion, showcasing potential benefits for India.

Affordable public Wi-Fi can offer significantly lower rates per GB to economically weaker sections. Instead of paying, say Rs 20 – Rs 22 for a 1 GB pack on mobile, they can be served better through public Wi-Fi, where the 1 GB rate can be about 10% of the 1 GB mobile pack.

Integrating FBB with PM-WANI public Wi-Fi will substantially boost affordability and accessibility and will optimise existing broadband infrastructure. PM-WANI can provide localised Wi-Fi hotspots at tariffs comparable to retail FBB (Rs 1–2 per GB), bridging urban-rural connectivity gaps, enhancing network utilisation and supporting small businesses and local economies. Affordable broadband access through public Wi-Fi can generate considerable economic multiplier effects, improving digital literacy, creating employment opportunities and promoting local entrepreneurship.

Expanding affordable public Wi-Fi via PM-WANI can provide long-term sustainability for service providers by increasing user volumes and growing customer bases. Policy interventions supporting fixed broadband and public Wi-Fi, aligned with India's Digital India and Bharat 6G Vision, must aim to establish 50 million public Wi-Fi hotspots by 2030, significantly enhancing affordable Internet availability nationwide.

Effective regulatory frameworks that ensure tariff parity between Public Data Offices and retail FTTH tariffs are crucial for correcting market distortions that have historically hindered the proliferation of public Wi-Fi, as well as the subsequent spread of affordable Internet access.

POLICY PRIORITIES FOR AFFORDABLE INTERNET ACCESS

The delayed implementation and limited proliferation of fibre-based broadband, combined with public Wi-Fi under the PM-WANI framework, have already resulted in substantial economic losses for India. Significant portions of the population remain digitally excluded, impeding opportunities for employment, education, entrepreneurship and broader socio-economic development. Continued inaction or inadequate deployment of such critical infrastructure could exacerbate India's digital divide, further marginalise economically disadvantaged groups and significantly hinder India's digital economy ambitions.

Transitioning from a predominantly mobile broadband model towards expanded fibre-based fixed broadband networks, complemented by initiatives like PM-WANI, represents a strategically sound economic choice for India. Such a transition promises increased data consumption at significantly lower costs, aligning with national goals for digital inclusion, affordability and equitable economic growth. Policymakers should prioritise regulatory frameworks supporting this shift, thereby fully realising India's digital potential.

True digital inclusion requires a broadband ecosystem where high-capacity fibre networks and community-driven PM-WANI hotspots work in tandem to drive down costs, boost usage, and bridge the digital divide for India's bottom half. Given the essential nature of telecommunication services, harnessing the synergistic combination of fibre and public Wi-Fi is of utmost importance. The pivotal question is simple: Will we choose to lower connectivity costs for millions of consumers, or continue to pay the far greater price of digital exclusion? The answer is loud and clear.

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Views are personal.

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