



BharatNet: Bridging the Digital Divide

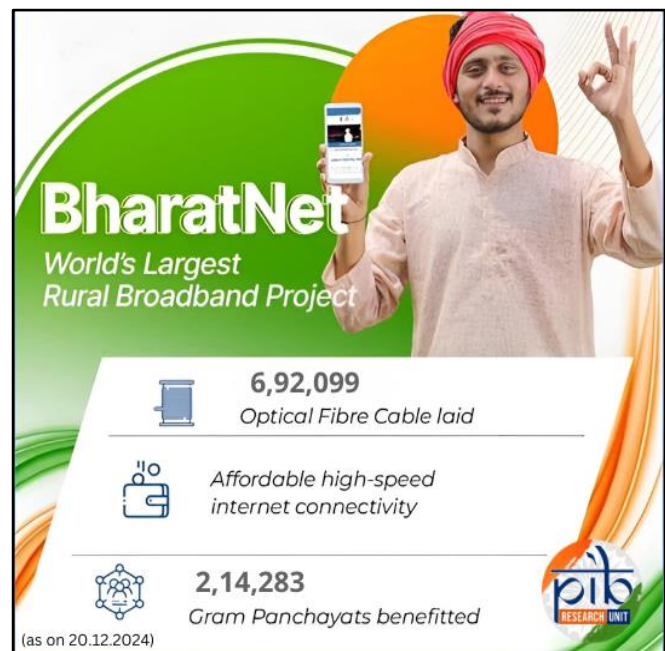
From Remote Villages to Smart Communities

(Ministry of Communications)

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Introduction to BharatNet

In a world increasingly driven by digital innovation, internet connectivity has become a cornerstone for economic growth, education, healthcare, and governance. Digital divide was significant challenge, especially in rural India, and to address this, the government of India launched **BharatNet** in **October 2011**, an ambitious project aimed at providing **affordable high-speed internet** access to every Gram Panchayat in the country. This initiative, under the Ministry of Communications, seeks to empower rural India, fostering inclusive growth and bridging the gap between urban and rural communities. BharatNet is not merely an infrastructure project; it is the backbone of India's journey towards a truly digital nation.



Amended BharatNet 2023

In **August 2023**, the government approved the **Amended BharatNet Program (ABP)**. The program provides for internet access by **Optical Fibre (OF)** connectivity to 2.64 lakh GPs in ring topology and also to provide OF connectivity to the remaining non-GP villages (approx. 3.8 lakhs) on demand basis. The design improvement, at a cost of Rs. 1,39,579 crores, in ABP is aiming at:

- Optical fiber connectivity from Block to GP in Ring topology
- IP- MPLS network with Routers at Blocks and GPs
- Provision of optical fiber connectivity to non-GP villages on demand basis

- Provision for Operation and maintenance for 10 years, including monitoring of network uptime through Centralized Network Operating Centre (CNO) and payment to Project Implementation Agency (PIA) as per Service Level Agreement (SLA)
- Provision of Power backup of adequate level at GPs and Blocks
- Provision of Remote Fibre Monitoring System (RFMS) at Block for fibre monitoring

Digital Bharat Nidhi: Funding BharatNet

Digital Bharat Nidhi (DBN) is a **fund** that aims to improve the quality and accessibility of telecommunications services in India. It was established by the government of India as a replacement for the Universal Service Obligation Fund (USOF). The DBN's goals are to:

- Provide affordable and high-quality mobile and digital services in rural and remote areas
- Ensure equitable access to knowledge and information
- Promote economic growth by increasing digital connectivity and services
- Narrow the digital divide and remove barriers to access



Working of BharatNet

BharatNet operates as the world's largest rural broadband connectivity program. The project is being executed by a Special Purpose Vehicle (SPV) namely **Bharat Broadband Network Limited (BBNL)**, which has been incorporated on 25.02.2012. On 30.04.2016, the Telecom Commission approved to implement the project in three phases:



1. **Phase I:** Focused on laying optical fiber cables to connect **1 lakh Gram Panchayats** by utilizing existing infrastructure. **Completed in December 2017**, this phase established the foundational network.
2. **Phase II:** Expanded the coverage to an **additional 1.5 lakh Gram Panchayats** using optical fiber, radio, and satellite technologies. This phase incorporated collaborative efforts with state governments and private entities.
3. **Phase III:** Aims at future-proofing the network by integrating **5G technologies**, increasing **bandwidth capacity**, and ensuring **robust last-mile connectivity**. This phase is **ongoing**, with a focus on improving accessibility and reliability.

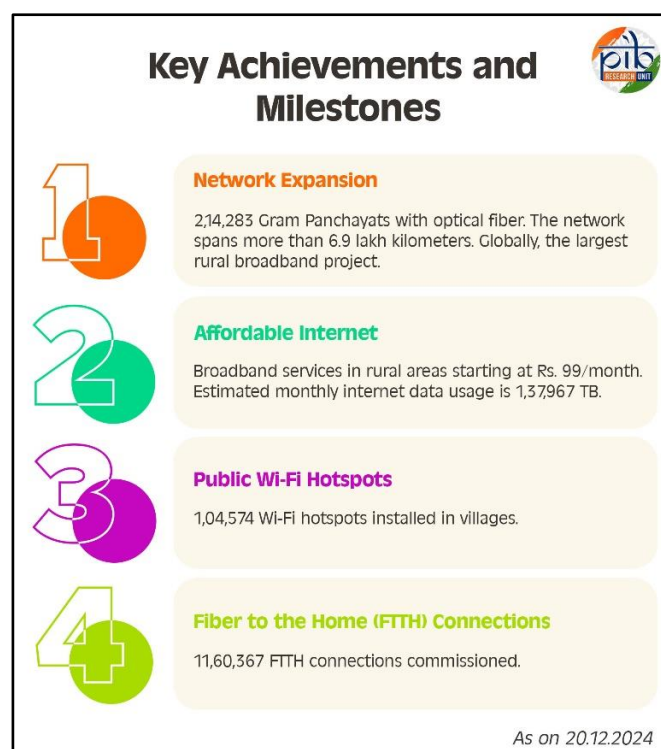
The network's core relies on optical fiber cables, satellite links for remote regions, and wireless technologies for last-mile connectivity. Implemented under the Universal Service Obligation Fund (USOF), BharatNet adopts a Public-Private Partnership (PPP) model to ensure efficient execution and maintenance.

Impact of BharatNet

BharatNet has had a transformative impact on rural India, contributing to socioeconomic development in multiple ways:

- Digital Inclusion:** The project has connected remote villages to high-speed internet, enabling access to e-governance services, online education, and telemedicine. Initiatives like the Digital India program thrive on BharatNet's infrastructure.
- Economic Opportunities:** With internet access, rural communities can participate in digital commerce, access financial services, and explore entrepreneurial opportunities. This has significantly boosted income generation in underserved areas.
- Education and Healthcare:** BharatNet has enabled digital classrooms and telehealth services, bridging the resource gap in rural areas. Students and patients now have access to quality education and medical expertise from urban centers.
- Empowering Local Governance:** Gram Panchayats use BharatNet to implement e-governance projects, improving transparency, efficiency, and citizen engagement in public services.

Key Achievements and Milestones



Internet Inclusivity in India

Internet access is available in the country including rural areas through the Telecom Service Providers (TSPs) through wireless mobile and fixed wireline broadband. Government has taken numerous initiatives to enhance internet connectivity in India through mobile connectivity and optical fiber rollout. As a result, as of October, 2024:

- Number of **4G** Base Transceiver Station (BTS) have reached **24,96,644**, spread across **783** districts.
- India has seen the **fastest rollout of 5G services in the world** with 4,62,084 BTS deployed across 779 districts.
- The **cost of data** has reduced drastically from Rs 269 per GB (in March 2014) to **Rs. 9.08 per GB**.
- The Median mobile broadband speed has increased from 1.30 Mbps in March 2014 to **95.67 Mbps**.
- The average wireless usage of data per subscriber has increased to **22.24 GB** per subscriber per month.
- Out of 6,44,131 villages, **6,15,836** number of villages are **having 4G mobile connectivity** in the country.

Conclusion

BharatNet holds the promise of transforming rural India into a digitally empowered society. By addressing these challenges and maintaining its momentum, the initiative can pave the way for a more inclusive and connected future. BharatNet is more than an infrastructure project; it is a **lifeline for millions of rural Indians aspiring to connect with opportunities** beyond their immediate surroundings. With robust execution and sustained efforts, BharatNet will continue to bridge the digital divide and empower every corner of India with the transformative power of the internet.

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