



BANDWIDTH TO BUSINESS VALUE

INDIA'S TELECOM SECTOR

and the Architecture of Enterprise Digitization



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Executive Summary

India's telecommunications sector has reached a scale of 1.32 billion subscribers as of 2025, positioning it as the second-largest market globally. With wireless connections accounting for 96.2 percent of the base and tele-density at 88 percent, the country has established widespread connectivity and a strong digital backbone.

“Internet adoption has expanded rapidly to 1 billion subscribers, supported by significant broadband growth from 149.75 million in 2016 to nearly 1 billion in 2025. This expansion reflects increasing digital consumption and enterprise digitization across sectors.”

“The sector continues to demonstrate stable financial growth, with gross revenue increasing from ₹3.36 trillion in FY2024 to ₹3.72 trillion in FY2025. Government support remains strong, with ₹81,005 crore allocated in FY2026, alongside cumulative FDI inflows of USD 40.07 billion, reinforcing long-term infrastructure development.”

“The convergence of telecommunications and IT infrastructure is a key enabler of next-generation enterprise operations. Integrated networks, cloud adoption, and data capabilities are supporting real-time processing, scalable digital platforms, and advanced analytics.”

High connectivity and digital infrastructure are enabling distributed operations, digital platforms, and data-driven decision-making across industries.

Over the upcoming years, the combined strength of telecom scale and IT capabilities will continue to strengthen India's position as a digitally connected economy, supporting innovation and technology-led growth.

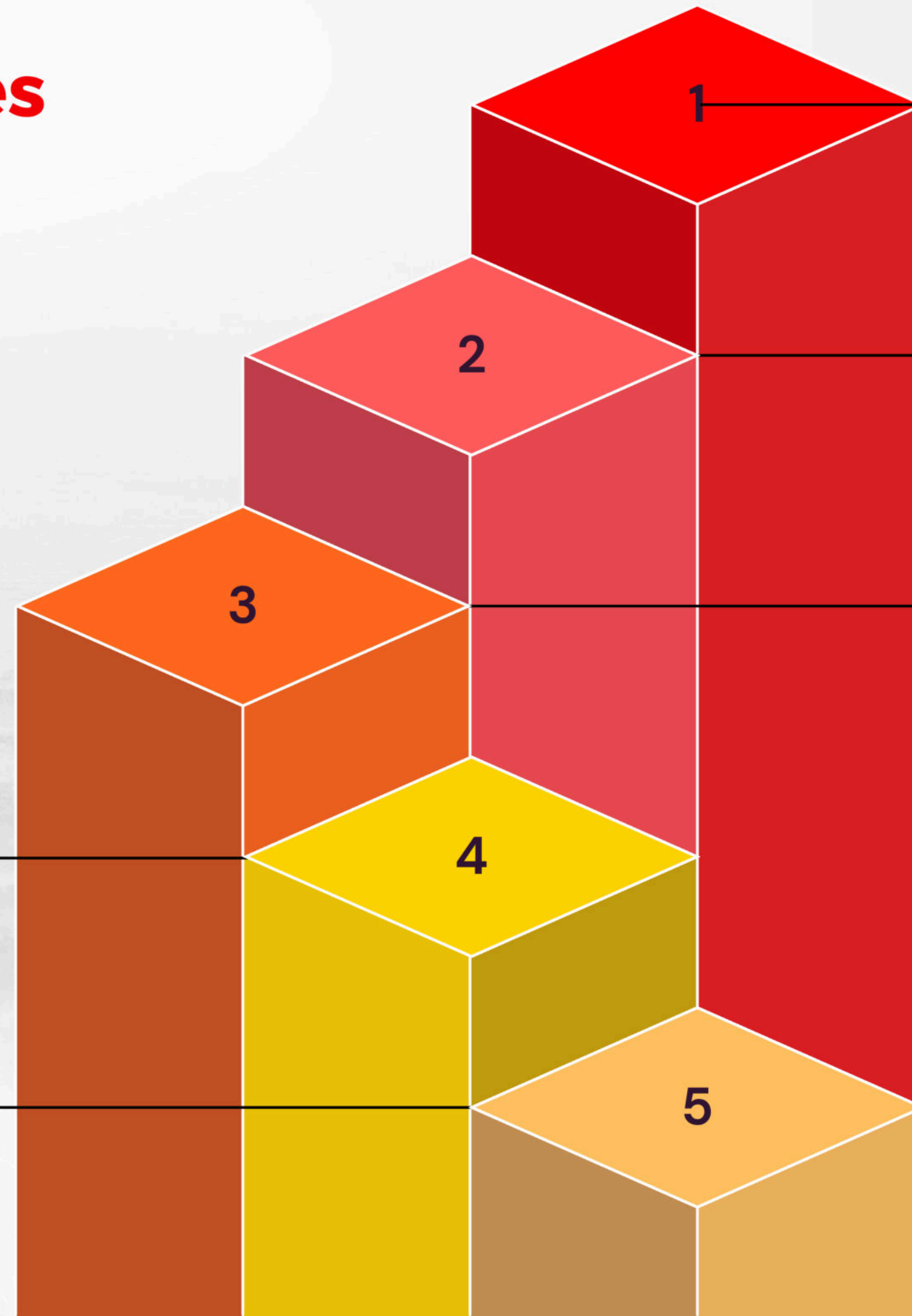
This report examines the current state and trajectory of India's telecommunications sector, with a focus on market scale, infrastructure growth, financial performance, and the role of telecom in enabling digital and enterprise transformation.



Key Objectives

To analyze the role of telecom in enabling digital and enterprise transformation

To highlight the integration of telecom and IT infrastructure in supporting advanced use cases.



To assess the scale and growth of the telecom sector in India

To examine trends in internet and broadband adoption

To evaluate financial performance and investment inflows



Telecom in India

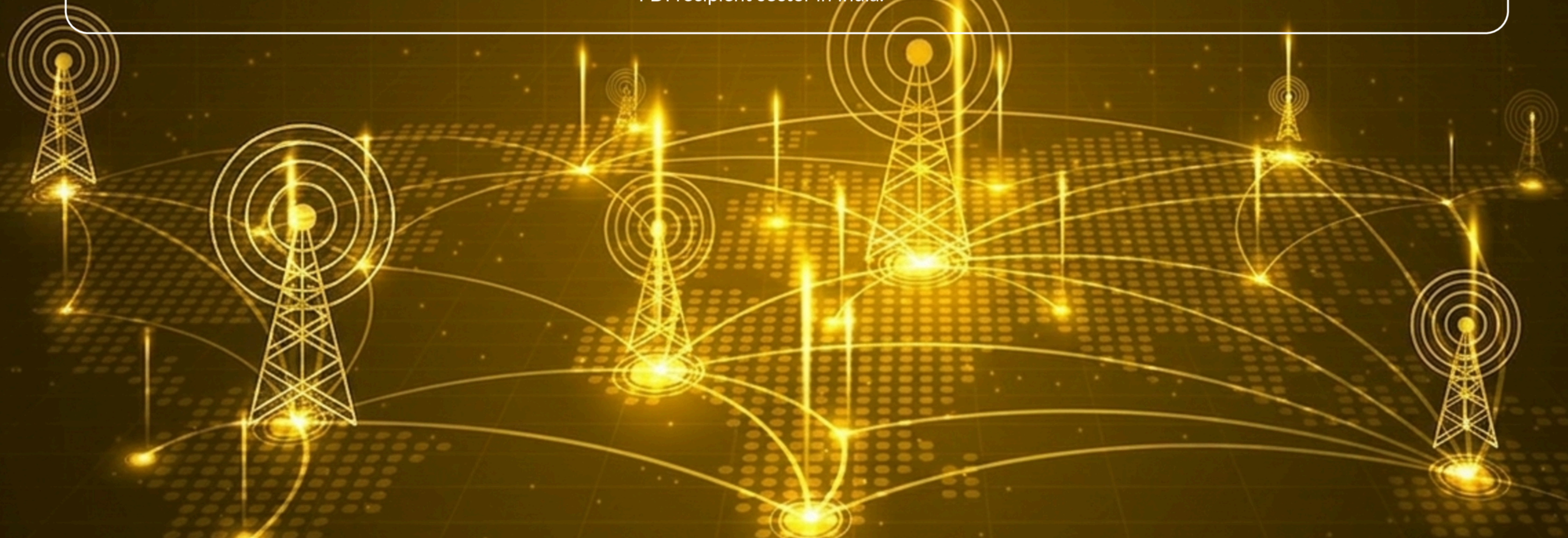
Market Position & Scale

1.1 Current State

India is the second largest telecommunications market globally by subscriber base. Total telephone subscribers reached 1.32 billion by December 2025, with wireless connections accounting for 96.2 percent of the total. Tele density stood at 88 percent.

Internet subscribers reached 1 billion, including 962 million wireless and 45 million wired connections. Broadband subscribers increased from 149.75 million in 2016 to 1 billion in December 2025.

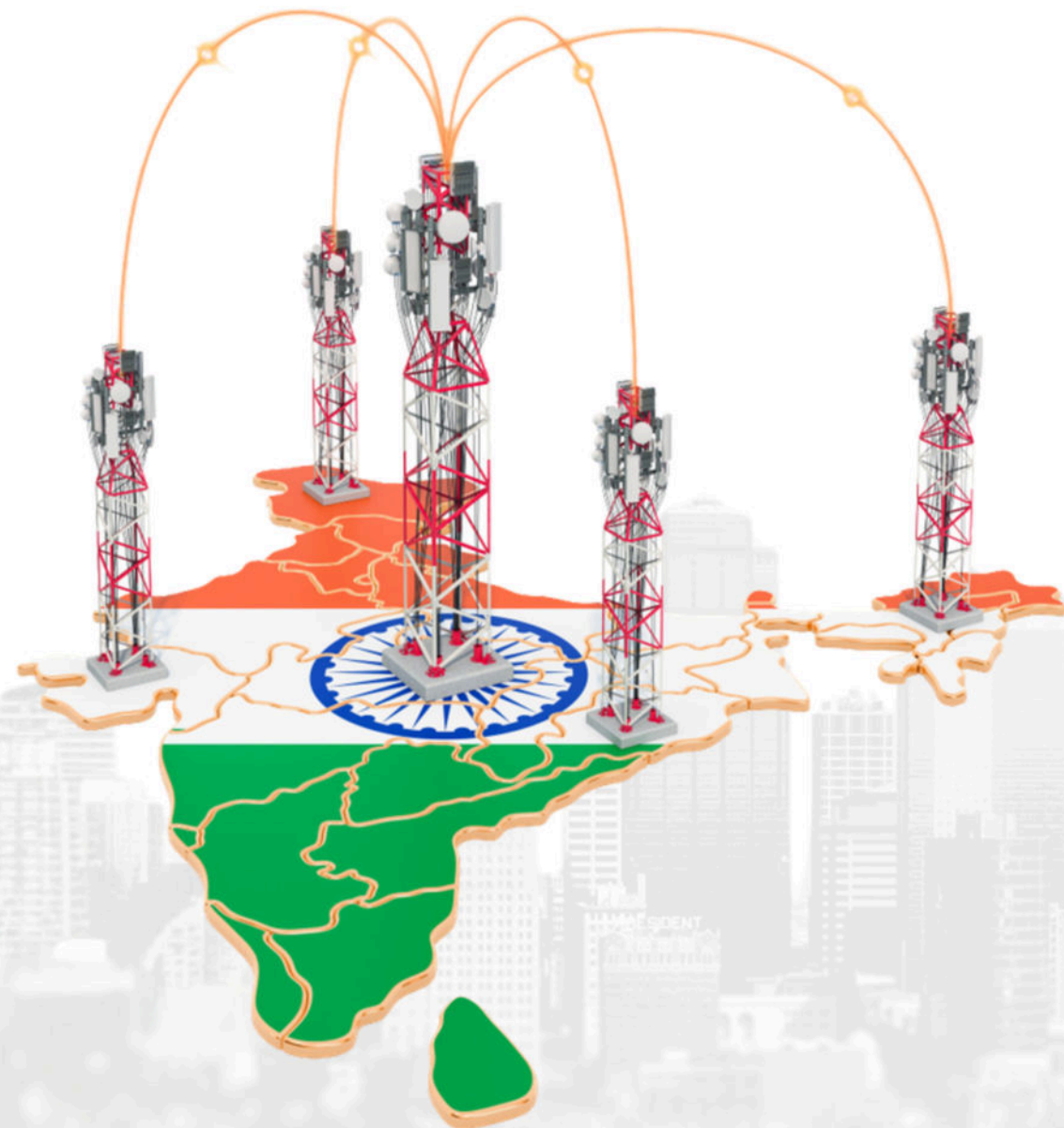
The telecom sector recorded gross revenue of ₹3.72 trillion in FY2025. The Union Budget FY2026 allocated ₹81,005 crore to the Department of Telecommunications and IT. Cumulative FDI inflows reached USD 40.07 billion between April 2000 and March 2025, making telecom the fourth largest FDI recipient sector in India.



1.2 Trajectory (Growth and Outlook)

The India telecom market was valued at USD 37.9 billion in 2025 and is projected to reach USD 72.32 billion by 2034, with a CAGR of 7.4 percent during the forecast period.

Sector revenue increased from ₹3.36 trillion in FY2024 to ₹3.72 trillion in FY2025, reflecting a growth rate of 10.72 percent.

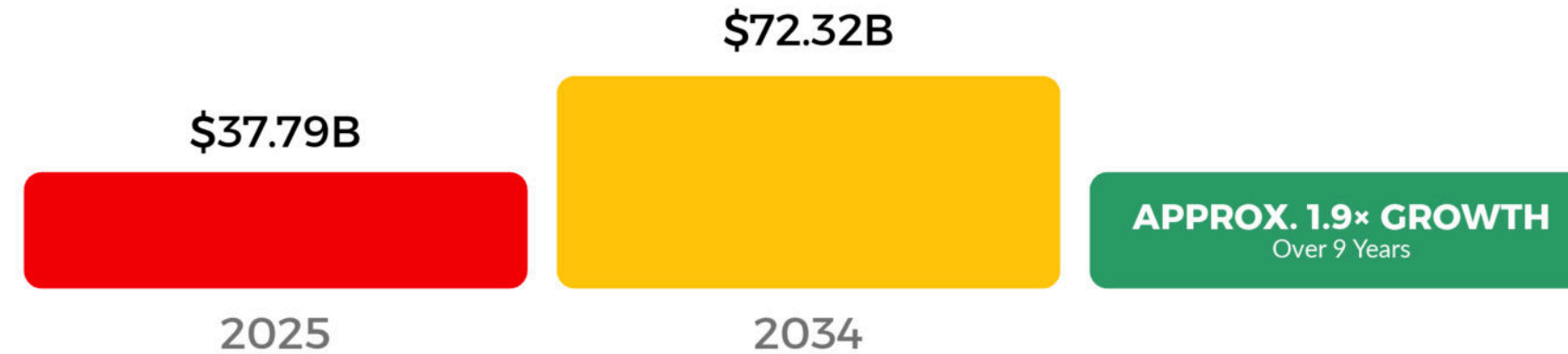


Market Overview and Forecast India Telecom Market

Source: IMARC Group



Market Growth Trajectory

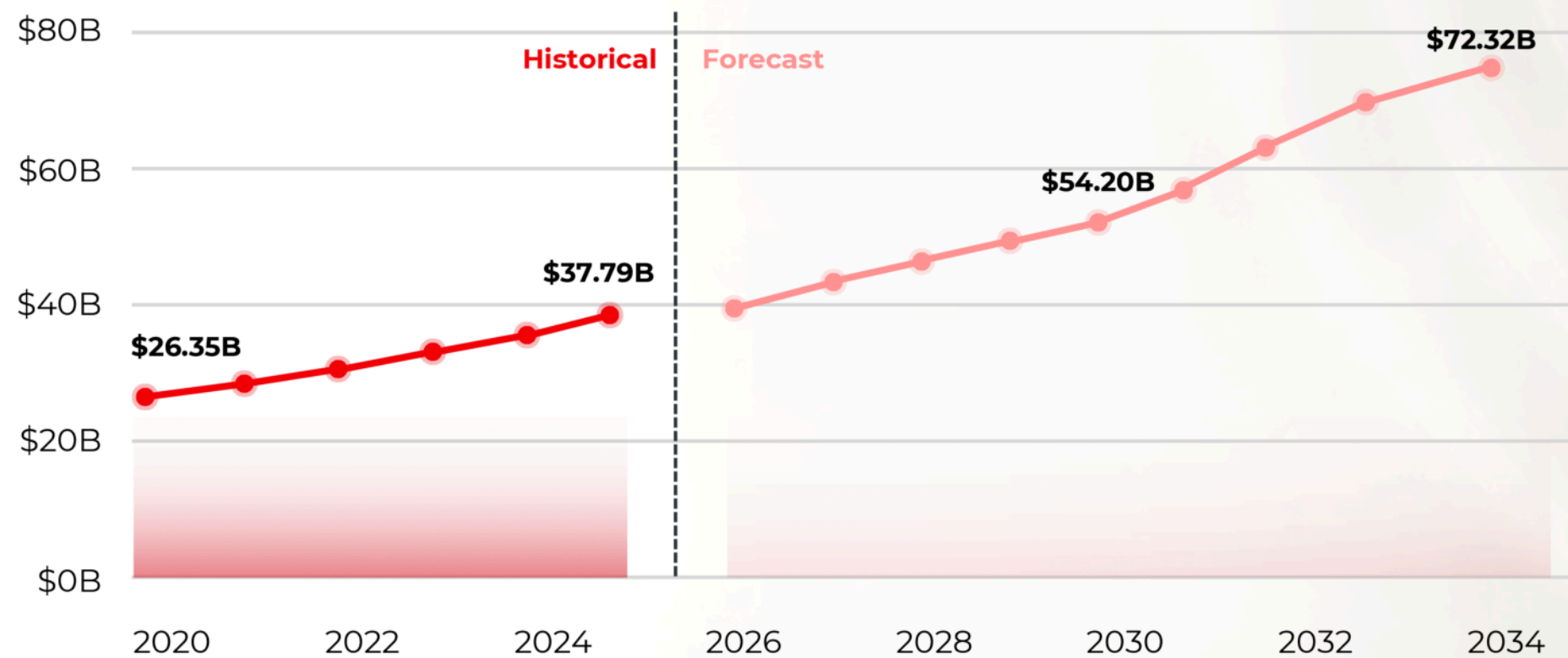


1.3 India Telecom Market Expansion (2020-2034)

The India telecom market increased from USD 26.35 billion in 2020 and is projected to reach USD 72.32 billion by 2034. This growth is supported by 5G deployment, increase in average revenue per user, enterprise digital adoption, and a smartphone user base of 740 million, making India the second largest smartphone market globally.

India telecom market size

2020 - 2034 · Billion USD



Source: IMARC Group



Competitive Landscape

2.1 Market Structure and Concentration

The India telecom market consists of a small number of operators serving a large subscriber base. As of 2025, total telephone subscribers are 1.32 billion. Wireless services account for 96.2 percent of total connections.

Two private operators Reliance Jio and Bharti Airtel account for a majority share of subscribers. The remaining share is distributed among other private and public sector operators.



2.2 Key Telecom Operators



Reliance Jio

has around 500 million wireless subscribers and 14 million wired subscribers. It launched 5G services in October 2022 and operates an OTT streaming platform through JioHotstar.

Bharti Airtel

has around 304 million wireless subscribers and 10 million wired subscribers. It launched 5G services in the same period. Airtel Payments Bank recorded over 1 billion transactions in January 2025.



Vodafone Idea



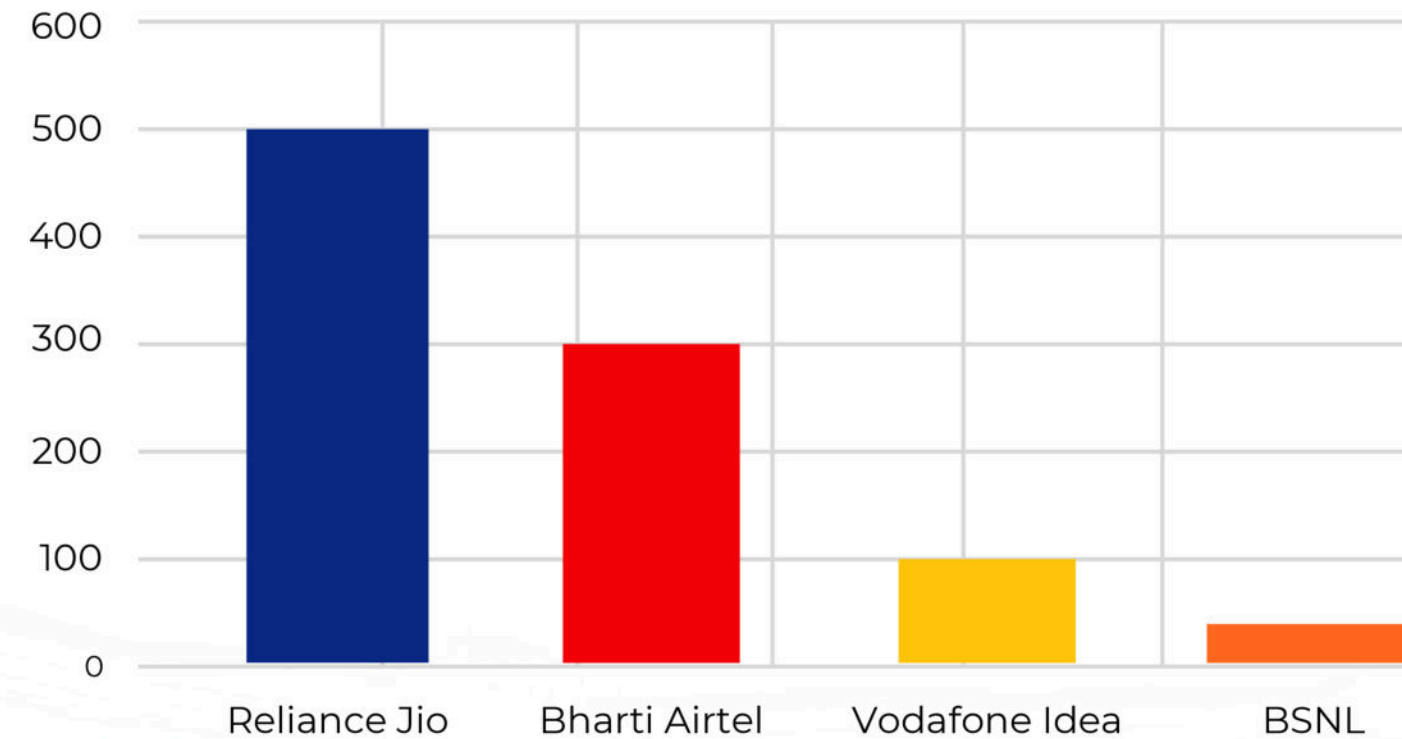
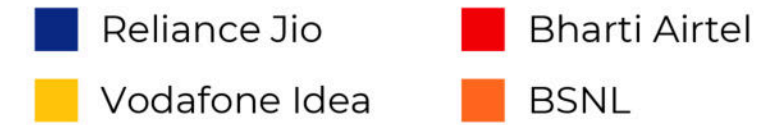
has around 128 million wireless subscribers and limited presence in wired services. It started 5G rollout in March 2025. It invested ₹3,510 crore in spectrum in June 2024.

BSNL and MTNL

together have around 30 million wireless subscribers and 5 million wired subscribers. These operators are owned by the government and are deploying 4G and 5G networks using domestic technology.



Subscriber Base



2.3 Market Share Analysis

- Reliance Jio holds the largest share at 51.06 percent, accounting for more than half of total broadband subscribers.
- Bharti Airtel has a share of 31.20 percent, making it the second largest provider.
- Vodafone Idea accounts for 12.75 percent of broadband subscribers.
- BSNL holds 3.28 percent share.
- Other operators, including Atria Convergence and smaller providers, together account for less than 2 percent of the market.



Service Provider-wise Market Share of Broadband (Wired & Wireless) Services as on 31st December 2025

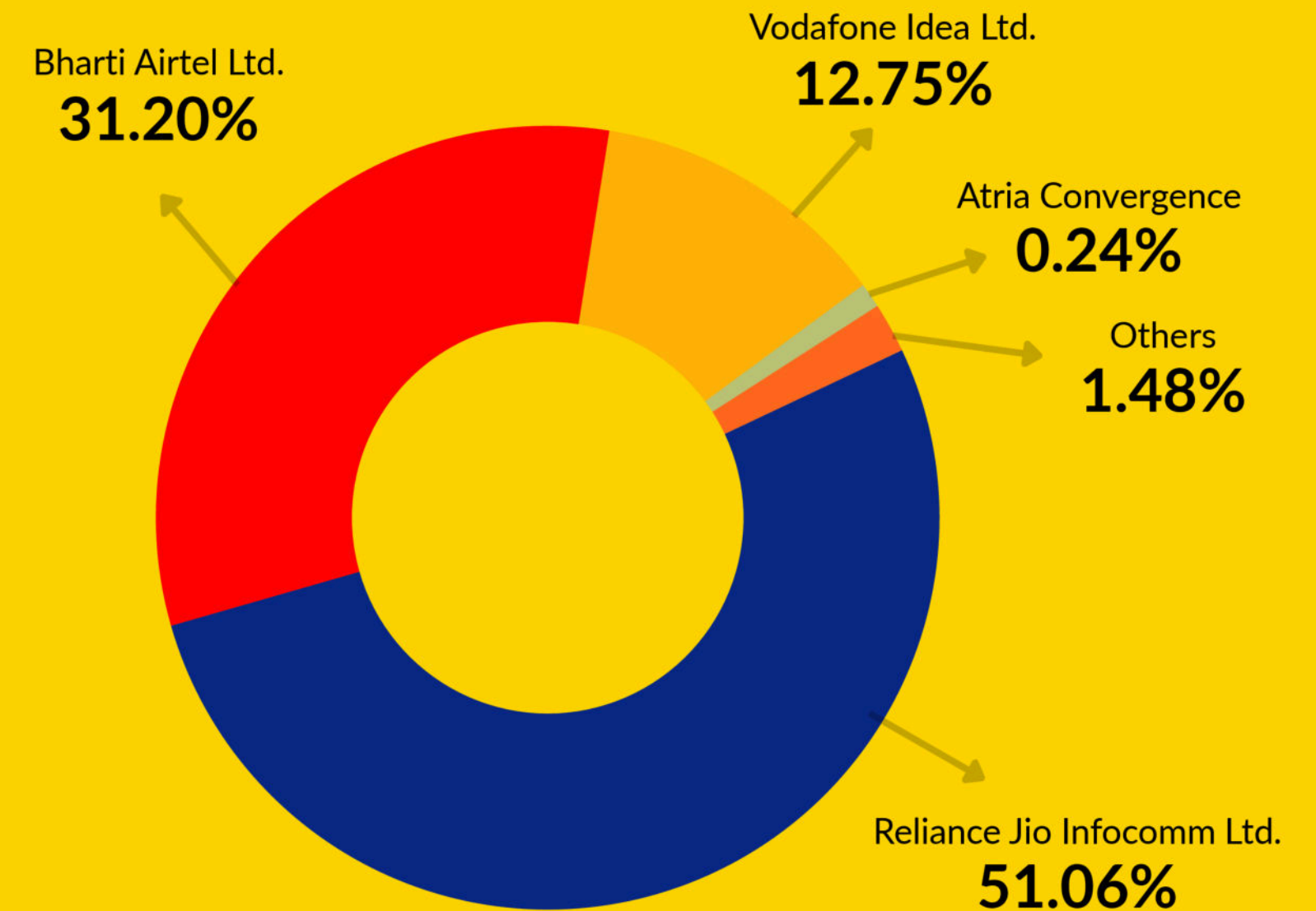


Fig. Operator-wise Market Share of Broadband Services

Source: PIB

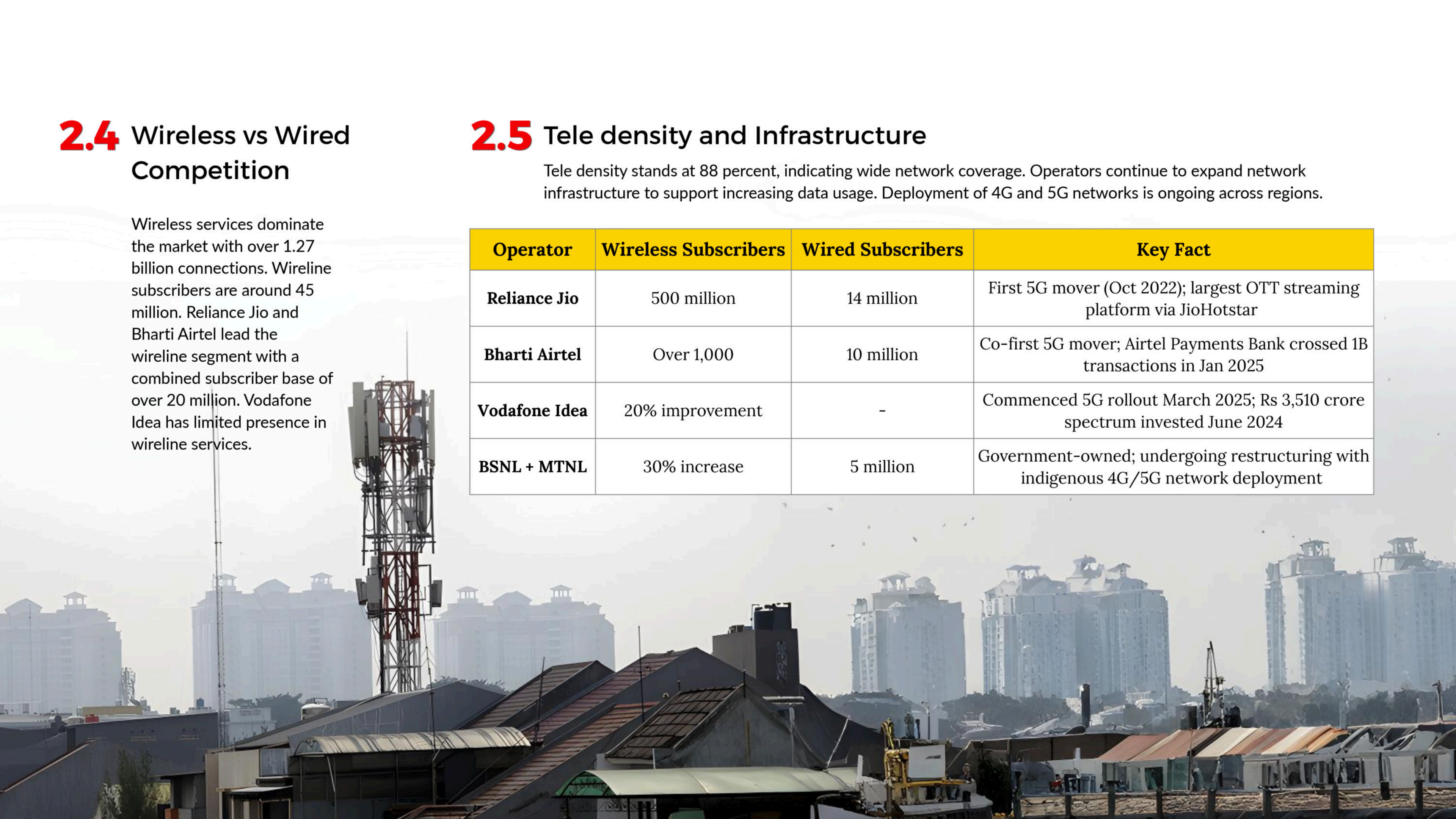
2.4 Wireless vs Wired Competition

Wireless services dominate the market with over 1.27 billion connections. Wireline subscribers are around 45 million. Reliance Jio and Bharti Airtel lead the wireline segment with a combined subscriber base of over 20 million. Vodafone Idea has limited presence in wireline services.

2.5 Tele density and Infrastructure

Tele density stands at 88 percent, indicating wide network coverage. Operators continue to expand network infrastructure to support increasing data usage. Deployment of 4G and 5G networks is ongoing across regions.

Operator	Wireless Subscribers	Wired Subscribers	Key Fact
Reliance Jio	500 million	14 million	First 5G mover (Oct 2022); largest OTT streaming platform via JioHotstar
Bharti Airtel	Over 1,000	10 million	Co-first 5G mover; Airtel Payments Bank crossed 1B transactions in Jan 2025
Vodafone Idea	20% improvement	-	Commenced 5G rollout March 2025; Rs 3,510 crore spectrum invested June 2024
BSNL + MTNL	30% increase	5 million	Government-owned; undergoing restructuring with indigenous 4G/5G network deployment



2.6 Telecom Industry Key Metrics

Metric	Stats
Global Rank	2nd largest telecom market
Total Telephone Subscribers	1.32 billion
Wireless Share	96.20%
Tele-density	88%
Total Internet Subscribers	1 billion
Wireless Subscribers	962 million
Wired Subscribers	45 million
Growth (2016-2025)	149.75M → 1B
Gross Revenue (FY2024)	₹3.36 trillion
Gross Revenue (FY2025)	₹3.72 trillion (USD 43.42B)
Growth Rate	10.72%
Budget Allocation (FY26)	₹81,005 crore (USD 9.27B)
Cumulative FDI (2000-2025)	USD 40.07 billion
FDI Rank	4th largest sector

Table: Industry Performance

Source: PIB



Future of Telecom in India

3.1 5G Expansion and Network Deployment

India launched 5G services in October 2022. By February 2025, services were available across most districts, supported by over 469,000 base transceiver stations and serving around 250 million users. By August 2025, the number of 5G base stations reached 498,000, covering over 99 percent of districts with population coverage of about 85 percent.

5G subscriptions are expected to reach approximately 500 million by 2027, accounting for close to 40 percent of total mobile subscriptions. Average monthly data usage per smartphone user is projected to reach around 50 GB during the same period.

2G and 3G subscriptions continue to decline. 4G remains the largest segment until the mid-period, after which its share reduces. 5G subscriptions increase each year following rollout and become the second largest segment by 2027.

India Mobile Report estimates that India's 5G subscriber base will reach 500 million by 2031.

5G



5G LTE (4G) WCDMA/HSPA (3G) GSM/EDGE-only (2G)

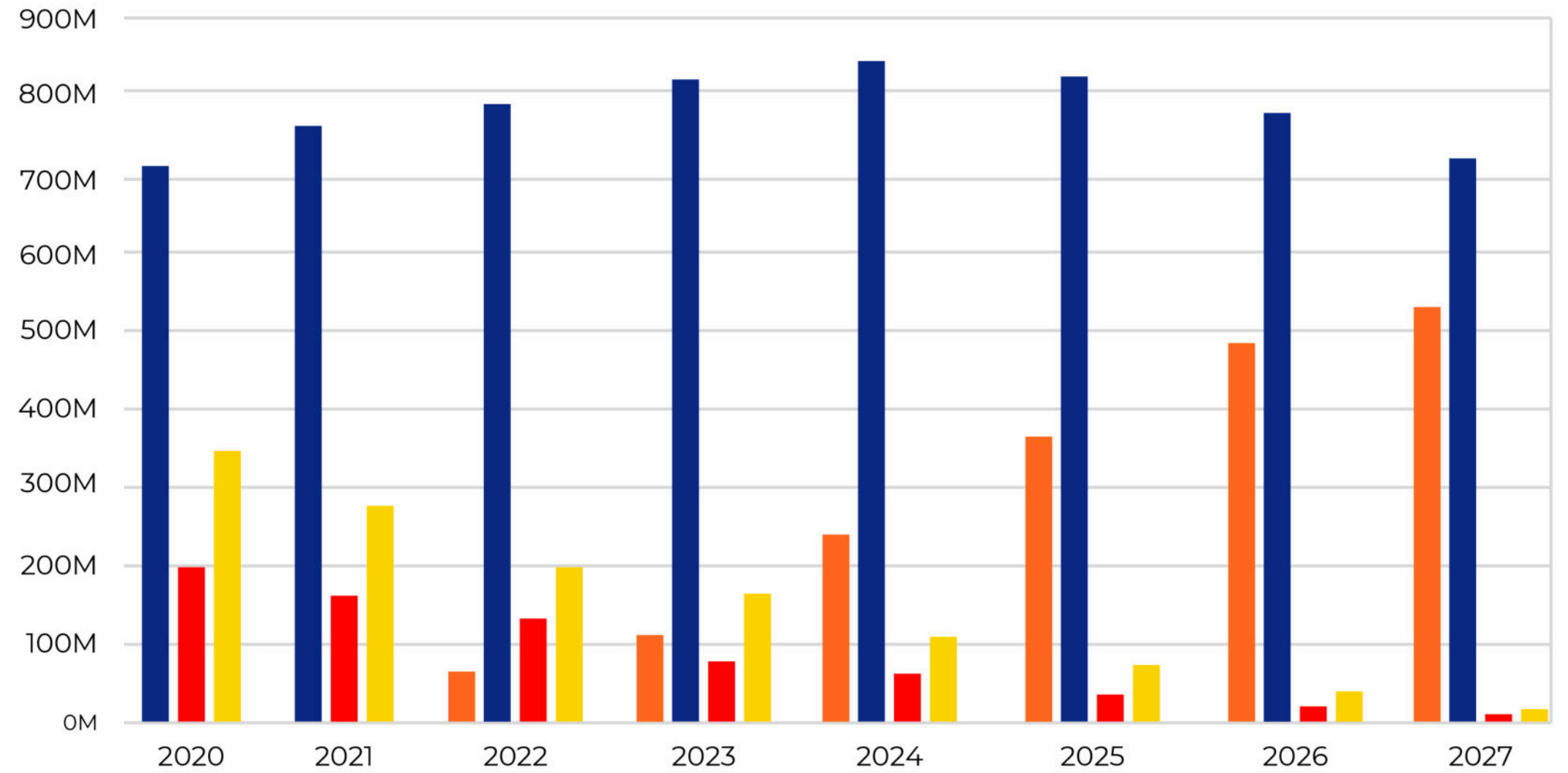


Fig. India region mobile subscriptions by technology (million)

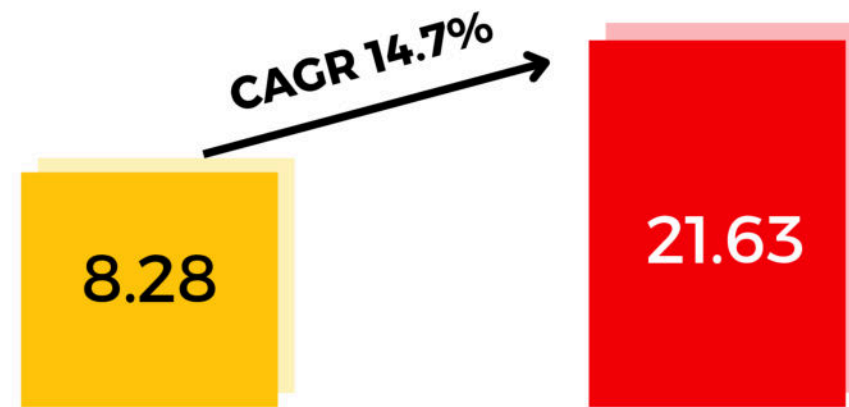
Source: Ericsson Report

3.2 Mobile Data Consumption Trend in India

Mobile data consumption in India was valued at INR 726.10 billion in 2024 and is projected to reach INR 2.21 trillion by 2030, reflecting a CAGR of 22.39 percent over the period from 2025 to 2030. Average mobile data usage per subscriber in the country is 31 GB per month, with data tariffs at the lowest levels globally with continued growth driven by video streaming and digital applications. As a result, revenue contribution from data services has increased relative to traditional services.

Voice services are now included within bundled data plans and have limited contribution as a standalone revenue stream. Pricing structures are based on data consumption, with voice offered as part of integrated plans.

The revenue composition of the sector has shifted from voice based billing to data based pricing models, with data services forming the primary source of growth.

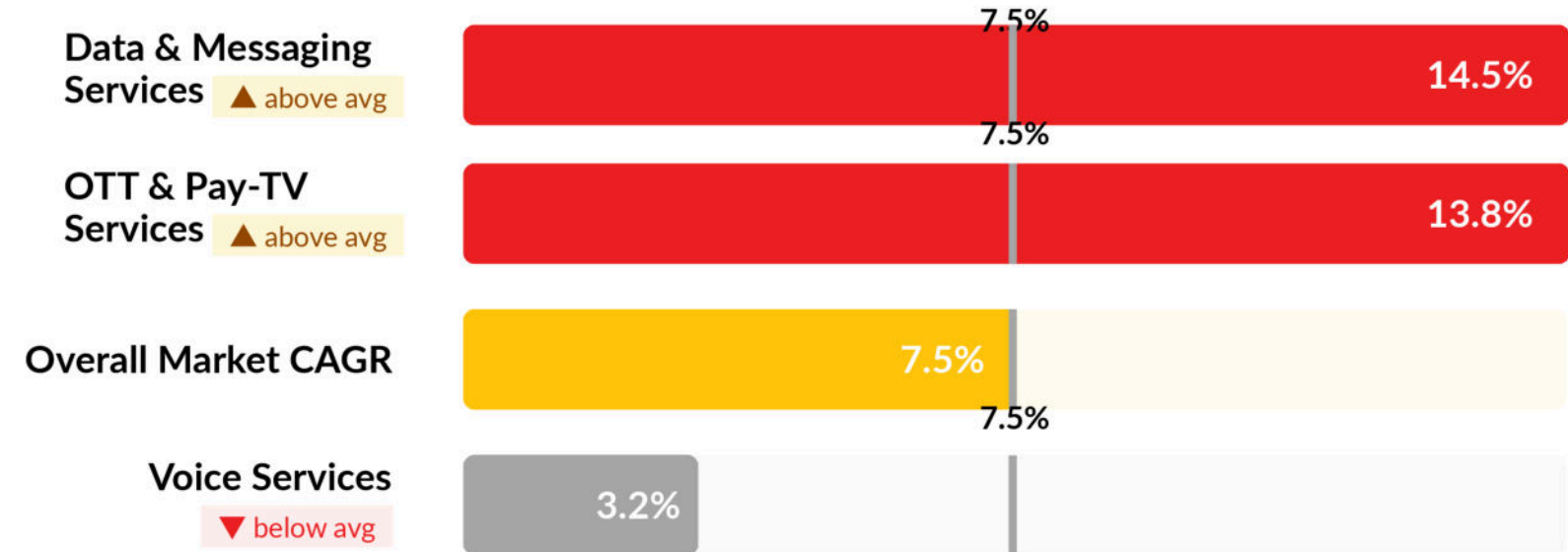


Market size in US\$ Billion

Fig. Mobile data consumption market

Source: [Maximize market research](#)

Data and Messaging Services are projected to grow at a CAGR of 14.5 percent through 2034. OTT and Pay TV services are expected to grow at 13.8 percent. Voice services are declining as voice is included within data plans at no additional cost.



Overall market CAGR (7.5%)

Fig. CAGR Comparison – India Telecom Market Segments

Source: IMARC Group



3.3 Enterprise Connectivity and Digital Demand

Enterprise demand for telecom services continues to increase with adoption of digital systems, cloud platforms, and data driven operations. Telecom networks provide connectivity for enterprise applications, data transfer, and operational systems. Private networks and enterprise connectivity solutions are being deployed to support specific industry requirements. Demand from sectors such as manufacturing, financial services, and technology contributes to growth in enterprise connectivity.

3.4 Technology Adoption in Networks

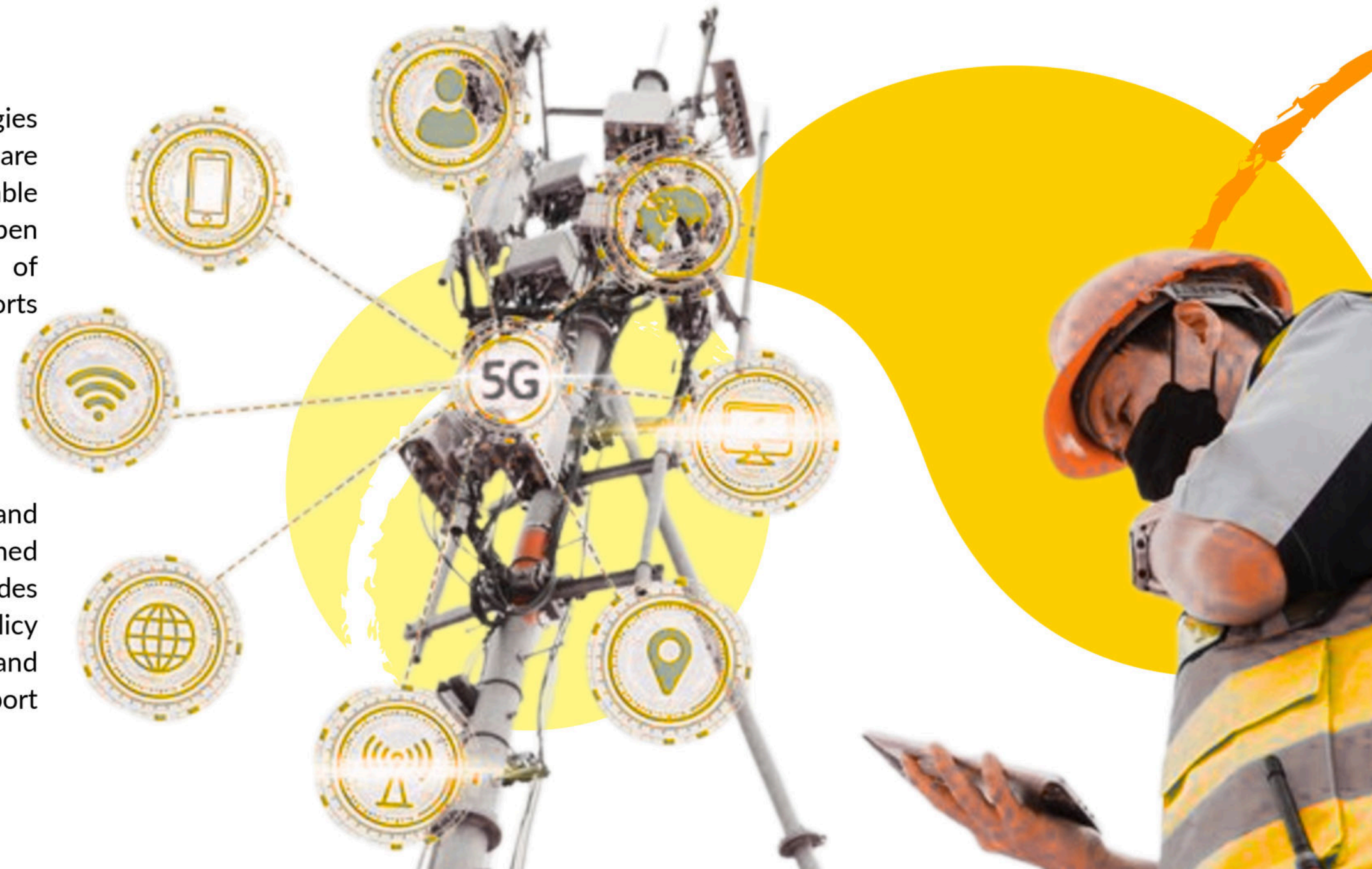
Network operations are shifting toward software based systems. Technologies such as software defined networking and network function virtualization are being implemented to manage network functions. These technologies enable configuration and management of networks through software systems. Open RAN is also being adopted in network deployment, allowing integration of components from multiple vendors. Adoption of these technologies supports network scalability and operational efficiency.

3.5 Investment and Policy Support

The telecom sector continues to receive investment for infrastructure and technology deployment. Cumulative foreign direct investment inflows reached USD 40.07 billion between 2000 and 2025. Government support includes allocation of ₹81,005 crore in FY2026 for telecommunications and IT. Policy measures support expansion of network coverage, spectrum allocation, and infrastructure development. Continued investment is required to support growth in data usage and network capacity.

3.6 Outlook

The telecom sector in India is expected to continue expansion in subscriber base, data usage, and infrastructure deployment. Growth will be supported by 5G expansion, increased broadband penetration, and rising enterprise demand for connectivity. Continued investment in network infrastructure and technology adoption will support the sector over the forecast period.



GLOBAL TELECOM Innovation

4.1 Growth in Global connectivity

Global internet users reached approximately 6 billion in 2025, representing close to 75 percent of the population. Mobile subscriptions continue to increase across regions. 5G subscriptions reached around 3 billion, with population coverage at about 55 percent. Expansion in connectivity is supported by mobile broadband and fixed network deployment.

4.2 Rapid Growth of 5G

5G deployment continues across regions, with coverage extending to a large share of the global population. In 2025, more than 80 percent of the population is expected to have access to 5G networks.

Operators are increasing deployment of standalone 5G networks, which operate without dependence on 4G infrastructure. These networks support lower latency and enable use cases such as industrial systems and connected devices. Adoption remains gradual due to investment requirements and deployment complexity.



4.3 Private Networks and Enterprise Connectivity

Private network deployment is increasing across industries such as manufacturing, logistics, and healthcare. These networks are configured for specific operational requirements and provide controlled connectivity environments.

Industrial use of private networks includes automation systems, monitoring applications, and data processing. Adoption is linked to enterprise requirements for reliability and security.

4.4 Growth in IoT and Connected Devices

The number of connected devices continues to increase across consumer and enterprise segments. IoT deployments are expanding in areas such as industrial systems, utilities, and transport networks.

Revenue growth in IoT related platforms is projected to increase, with platform based services expected to grow at around 31 percent CAGR between 2024 and 2029.



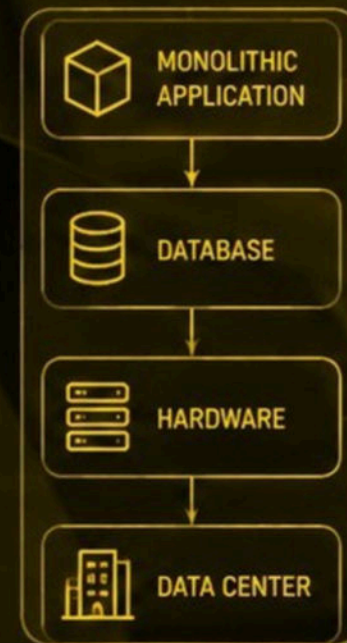
4.5 Network Architecture Transformation

Telecom networks are transitioning toward software based architectures. This includes adoption of software defined networking and network function virtualisation.

Open network models such as virtual RAN and Open RAN are being deployed to separate hardware and software components. These models support multi-vendor integration and flexible deployment. Open RAN disaggregates traditional base station hardware into software-defined components with standardized interfaces, enabling multi-vendor interoperability. The O-RAN Alliance, comprising over 300 members, defines these standards. The technology is a key part of network modernization across the United States, Europe, Japan, and South Korea.

In India, Open RAN gained traction from 2020 onwards, aligned with 4G/5G rollouts and policy focus on domestic telecom capabilities. Operators and technology providers are actively adopting Open RAN architectures to reduce dependence on global vendors. Open RAN reduces vendor lock-in and lowers capital expenditure while enabling cloud-native and software-defined networks. Operators such as Vodafone, Rakuten, and Dish Network have deployed it commercially, with continued investment in testing and deployment infrastructure.

LEGACY ARCHITECTURE



TRANSFORMED NETWORK ARCHITECTURE



4.6 Edge Computing and Low Latency Systems

Edge infrastructure is being deployed to support applications that require reduced latency. Data processing is carried out closer to end users, enabling real time applications across sectors.

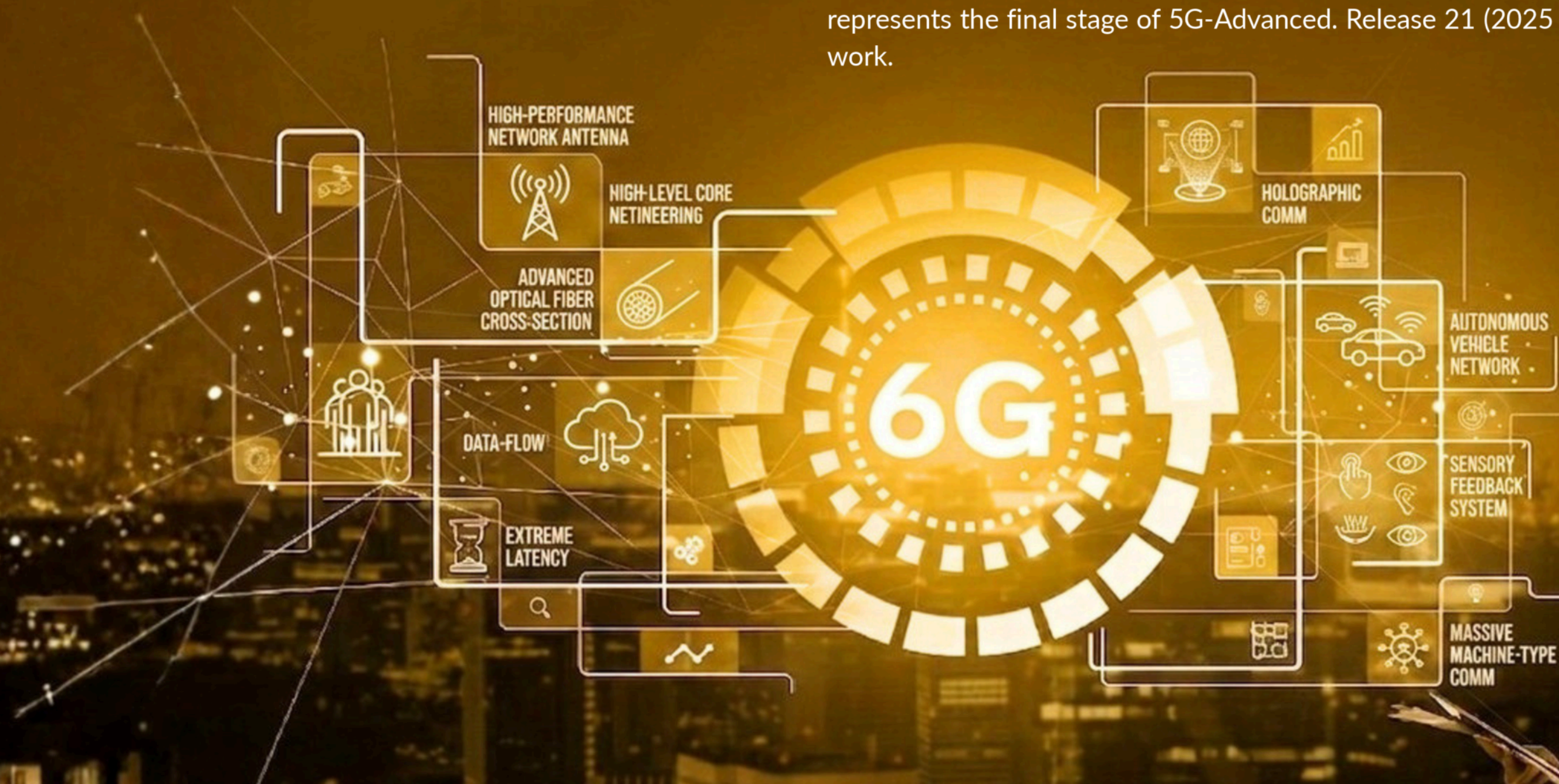
This includes use cases in industrial automation, connected systems, and data processing environments.

4.7 6G Research and Future Networks

Research on next generation wireless technology is underway alongside 5G deployment. 6G development is focused on higher data transmission capacity and integration with advanced computing systems.

Early stage work includes exploration of new frequency bands, network architecture models, and integration with data and compute systems. Commercial deployment is expected in the next decade.

6G research is progressing under coordinated programs across major economies. The International Telecommunication Union (ITU) published its IMT-2030 vision in 2023, identifying three new capability areas for 6G beyond those of 5G: integrated sensing and communication, native embedding of intelligence, and ubiquitous connectivity including non-terrestrial networks. 3GPP's Release 20 (2024 to 2025) represents the final stage of 5G-Advanced. Release 21 (2025 to 2027) initiates normative 6G specification work.



4.8 Infrastructure Investment Trends

Telecom operators continue to invest in network infrastructure, including spectrum, fiber, and data systems. Global investment in telecom infrastructure is expected to remain high through the second half of the decade, with spending focused on network expansion and capacity upgrades.

4.9 Satellite Terrestrial Integration

Low Earth Orbit (LEO) satellite constellations from Starlink (SpaceX), OneWeb (Eutelsat), and Amazon Kuiper are delivering broadband to regions where terrestrial infrastructure is not viable. These systems are also being integrated as backhaul for terrestrial mobile networks in remote areas. The ITU and 3GPP have defined specifications for non-terrestrial network (NTN) integration with 5G and 6G standards, enabling seamless handoff between satellite and terrestrial cells.

4.10 Network Automation and Autonomous Operations

Telecom networks are adding machine learning-based traffic prediction, self-healing fault detection, and automated resource allocation. These capabilities reduce operational expenditure by lowering manual intervention requirements. AI-driven operations are particularly relevant for 5G networks, which have a substantially larger number of network elements, including small cells, edge nodes, and network slices, compared to 4G architectures.



Potential Impact of Global Telecom

Innovation on India



Category	Global Telecom Innovation	Observed / Expected Impact in India	Key Statistics
Market Scale	Slowing subscriber growth globally; shift to usage intensity	Large subscriber base with increasing data usage per user	1,200.8M subscribers; 969.1M internet users
Network Deployment	Rapid 5G rollout across major economies	Fastest large-scale 5G deployment among large markets	99.6% districts covered; ~85% population coverage
Technology Transition	Migration from 4G to 5G; early 6G research	Transitional stage with mixed network usage	~70% 4G traffic; ~30% 5G traffic
Data Consumption	Rising global per-user data consumption	High growth in total data traffic	~65,009 PB quarterly wireless data usage (Q2 2025)
Traffic Shift	5G becoming dominant traffic carrier globally	5G traffic share rising toward parity with 4G	3x increase in 5G data traffic (2024); crossover expected by 2026
Device Ecosystem	Rapid global shift to 5G-enabled devices	Accelerated user migration to 5G networks	87% smartphones shipped are 5G-enabled
Enterprise Demand	Growth in enterprise telecom (cloud, edge, IoT)	Increased adoption of industrial and enterprise use cases	Manufacturing, logistics, healthcare use cases expanding
Network Architecture	Shift to Open RAN, edge computing, software-defined networks	Adoption of flexible and scalable network models	Growth in Fixed Wireless Access (FWA)
Broadband Expansion	Alternatives to fiber via wireless technologies	Faster rural and semi-urban broadband expansion	44.82M FWA subscribers
AI Integration	AI-led network optimization and automation	Improved network efficiency and capacity handling	AI-driven traffic growth expected by 2026

Category	Global Telecom Innovation	Observed / Expected Impact in India	Key Statistics
Revenue Model	Shift from subscriber growth to ARPU growth	Increasing monetization per user	Airtel ARPU: ₹256
Capital Requirements	High investment in spectrum and infrastructure	Policy interventions to reduce cost burden	Spectrum prices reduced by up to 37%
Market Structure	Consolidation in telecom markets globally	Oligopolistic market with few dominant players	Subscriber concentration among top operators
Inclusion	Persistent global digital divide	High access but uneven usage intensity	85% tele-density; low rural data usage
Infrastructure Load	Increased demand from consumers and enterprises	Network strain and need for densification	~59,447–65,009 PB quarterly data usage
Future Outlook	5G scaling; early-stage 6G development	Continued expansion and deeper penetration	1B+ 5G subscribers expected by 2031; 79% penetration

Global telecom innovation is centered on 5G deployment, higher data usage, and enterprise demand. In India, this is reflected in rapid network rollout, increasing share of 5G traffic, and sustained growth in data consumption. The device ecosystem is aligned with network upgrades, enabling faster user migration. Network architecture is shifting toward software-led systems and wireless broadband solutions, supporting wider coverage. Market structure is moving toward higher revenue per user with limited subscriber growth. Capital requirements remain elevated due to spectrum and infrastructure needs, with policy support in place. Access levels are high, while usage varies across segments. Network load continues to increase, driven by consumer and enterprise demand. 5G is expected to become the primary traffic carrier in the near term.

Key Outcomes



Data consumption increases at a sustained rate



Enterprise demand contributes a larger share of network usage



Broadband access expands through wireless solutions

5G

5G becomes the primary network for data traffic

01

02

03

04

05

06

07



Revenue growth shifts toward higher ARPU



Network investment requirements remain high



Usage gap persists across user segments

An aerial view of a city with a telecommunications tower in the foreground. The tower is a lattice structure with several large, circular, white satellite dishes or antennas mounted on it. The city below is densely packed with buildings, and the sky is a hazy, golden-brown color. The overall scene is bathed in a warm, yellowish light, suggesting either sunrise or sunset.

The **Indian Telecom Sector**

Projections to 2030 and 2035

This section uses published data from TRAI, DoT, GSMA, ITU, and Ericsson. Estimates are based on extrapolation of available data and cited projections.

Telecom Sector – 2030 vs 2035

How each dimension shifts over the five-year horizon

2030

GROWTH & TRANSITION

5G majority · Edge computing · Enterprise uplift

2035

MATURITY & SATURATION

6G commercial · AI embedded · Universal access

NETWORK & TECHNOLOGY

5G PENETRATION

2030

Majority ~70–80% subscribers on 5G

2035

Near-universal; legacy networks phased out

6G DEVELOPMENT

2030

Early pilots in select markets

2035

Commercial rollout; initial adoption in India

NETWORK ARCHITECTURE

2030

Edge computing & software-defined expansion

2035

Fully integrated AI-driven distributed systems

AI INTEGRATION

2030

AI for network optimization & operations

2035

AI embedded across network, delivery & CX

MARKET & REVENUE

SUBSCRIBER BASE

2030

Stabilizing; rural & secondary users driving gains

2035

Near saturation; growth via device replacement

ARPU TRENDS

2030

Gradual rise via 5G monetization

2035

Stabilized with differentiated service tiers

ENTERPRISE CONTRIBUTION

2030

Significant share from enterprise use cases

2035

M2M & enterprise dominate total traffic share

MARKET STRUCTURE

2030

Consolidated; few large operators dominate

2035

Stable with very high new entry barriers

INFRASTRUCTURE & ACCESS

DATA CONSUMPTION

2030

Continuous rise — video, cloud & AI apps

2035

High-volume, low-latency across all systems

BROADBAND ACCESS

2030

Wider coverage via FWA & fiber buildout

2035

Near-universal urban & rural broadband

CAPITAL INVESTMENT

2030

Spectrum, fiber & densification spend

2035

Shifts to upgrades & 6G infrastructure

USE CASE EVOLUTION

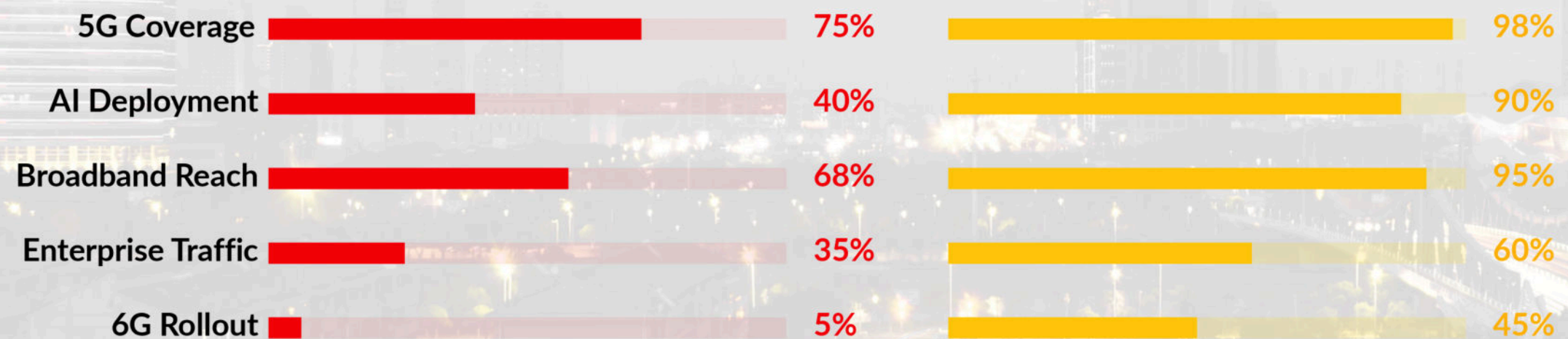
2030

Industrial, logistics & digital services growth

2035

Autonomous systems & smart infrastructure

MATURITY INDICATORS (ILLUSTRATIVE)



Impact of Telecom

Sector on Governance



01 Network reach and Service Access

India had 1.22 billion telecom subscribers and a tele-density of 86.65% as of September 2025. This level of access supports the delivery of government services across districts, including rural regions connected under national broadband programs.

02 Internet Penetration and Digital Platforms

Internet subscribers reached 995.6 million in 2025. Government platforms for identity, payments, and public services operate on telecom networks, enabling access through mobile and broadband connections.

03 Mobile Connectivity and Service Delivery

Smartphone penetration and mobile internet access support use of government applications for documentation, service requests, and status tracking. Mobile networks act as the primary access channel in areas with limited fixed infrastructure.

04 Digital Payments and Financial Execution

Telecom networks support payment systems linked to government programs. India recorded over 130 billion digital payment transactions in FY2024 (RBI), enabled through mobile connectivity and telecom infrastructure.

05 Administrative Communication and Data Exchange

Telecom networks support data transfer between government departments for records, reporting, and coordination. This includes real-time updates from field units to central systems.

06 Rural Connectivity Expansion

Programs such as BharatNet target connectivity to over 250,000 gram panchayats. Telecom infrastructure supports last-mile access for governance services in rural areas.

07 Regulatory Oversight and Data Control

The telecom sector operates under defined frameworks covering spectrum allocation, licensing, and data protection. These frameworks ensure the controlled operation of networks used for governance systems.

08 5G Deployment and Public Systems

5G services, launched in 2022, had reached over 1,000 cities by 2025. This supports applications such as remote monitoring, digital service delivery, and integration of public systems requiring higher data capacity.

09 Data Handling and System Integration

Telecom networks enable continuous data flow between platforms used for identity systems, financial transfers, and service delivery. This supports integration across central and state-level systems.

10 Operational Continuity

Telecom infrastructure provides continuous connectivity required for the functioning of digital governance platforms, ensuring availability of services and communication across administrative levels.



IT and Telecom

Integration Success



01 Network Virtualization and Software-Defined Architecture

- Deployment of software-defined networking and network function virtualization replaces hardware-based systems.
- Centralized IT platforms manage routing, switching, and traffic orchestration.

Operational Output

Reduced dependence on physical network elements.

Faster network provisioning cycles.

02 Cloud Infrastructure and Data Centers

- Telecom operators deploy cloud-native cores and distributed data centers.
- IT systems handle workload scaling, storage, and real-time processing.

Dataset Indicator

Growth in broadband subscribers to 1,007.35 million indicates reliance on scalable IT-backed infrastructure.

03 AI and Data Analytics Integration

- IT systems process subscriber data, usage patterns, and network metrics.
- Applications include traffic management, predictive maintenance, and customer segmentation.

Observed Trend

Increase in ARPU (₹190.99 → ₹194.57 QoQ in 2025) reflects data-driven monetization.

04 Digital Platforms and OSS/BSS Transformation

- OSS & BSS systems underpin telecom operations
- Automated billing, provisioning & customer lifecycle management

Operational Output

Auto billing

Lifecycle automation

05 5G Core and Edge Computing Integration

- IT systems enable low-latency processing through edge computing nodes.
- Supports enterprise use cases including IoT and real-time applications.

Dataset Indicator

5G accounts for 32.15% of total data usage volume.

06 Cybersecurity and Network Assurance

- IT frameworks ensure security, fraud detection & compliance
- Continuous automated monitoring across network layers

Continuous monitoring

Compliance

8.1 | Major Impact on Growth



Subscriber Growth & Digital Penetration

1.3B

Total subscribers

1.3B

Tele-density, Dec 2025

Impact

Expansion of telecom services into rural and semi-urban regions.

Increase in digital service adoption.



Data Consumption Expansion

- Wireless data usage dominated by 4G and 5G networks.
- Rapid shift from narrowband to broadband.

Impact

Increased demand for high-speed networks

Higher infrastructure utilization



Revenue Growth and Monetization

- ARPU increase across operators.
- Migration to higher-value plans.

Recent Indicators

ARPU increase supported by 4G and 5G adoption.



Infrastructure Expansion Efficiency

- IT-driven automation reduces deployment time.
- Faster scaling of networks.

Observed Outcome

Addition of 76.45 million subscribers in one quarter (Q4 2025).



5G Rollout and Coverage

- 5G coverage reached ~85% of India's population by 2025
- Accelerated adoption of advanced consumer & enterprise services
- Integration of IoT, edge computing, and real-time use cases

Impact

Advanced service adoption

Enterprise use case integration

Consumer experience upgrade

8.2 | Benefits of IT-Telecom Integration

Rural Connectivity Enablement

- IT-enabled network planning improves coverage efficiency.
- Increase in rural subscribers to 543.70 million (Dec 2025).

Ecosystem Expansion

- Integration with digital services such as payments, streaming, and enterprise solutions.
- Telecom operators act as digital platforms.

05

01

04

02

03

Service Quality Improvement

- Real-time monitoring improves network uptime.
- Reduced latency through edge computing.

Revenue Optimization

- Data analytics improves pricing strategies.
- Targeted service offerings increase ARPU.

Operational Efficiency

- Automation reduces manual intervention.
- Lower operating costs per subscriber.

Scalability

- Cloud-native systems enable rapid capacity expansion.
- Supports growth from millions to billions of users.

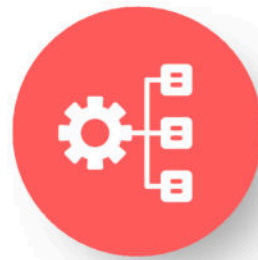


8.3 | Continuous Outcomes (Forward View)



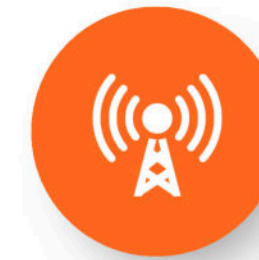
Growth in Market Size

- Telecom market projected to reach USD 72.32 billion by 2034.



Shift to Software-Led Networks

- Increased reliance on programmable and automated network systems.
- Reduction in legacy infrastructure.



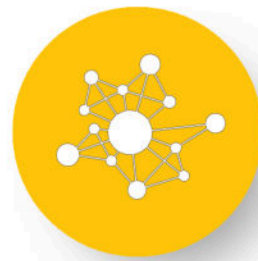
Expansion of Enterprise Telecom Services

- Growth in IoT, private networks, and edge computing.
- Integration with manufacturing, healthcare, and logistics sectors.



Data-Driven Revenue Models

- Continued increase in ARPU through analytics-based pricing.
- Expansion of bundled digital services.



Network Densification & Edge Deployment

- Increased deployment of small cells and edge nodes.
- Support for low-latency applications.



Integration with National Digital Infrastructure

- Alignment with programs such as BharatNet and Digital India.
- Expansion of broadband access and public digital platforms.

Case Studies



Use Case: Cloud-Native Network Deployment

Fully software-defined 4G and 5G network built on cloud infrastructure.

Integration

Virtualized core, in-house OSS/BSS, data analytics platforms.

Output

Subscribers Supported: The upward trend of Reliance Jio's subscriber base in India, which grew from approximately 400 million in 2020 to an estimated 523.44 million by early 2026.

Population covered with 5G: Reliance Jio has achieved nationwide 5G presence across 99.9% of India's districts, deploying over one million cells to support 268 million subscribers and 55% of its total wireless traffic.



Subscriber Base (millions)

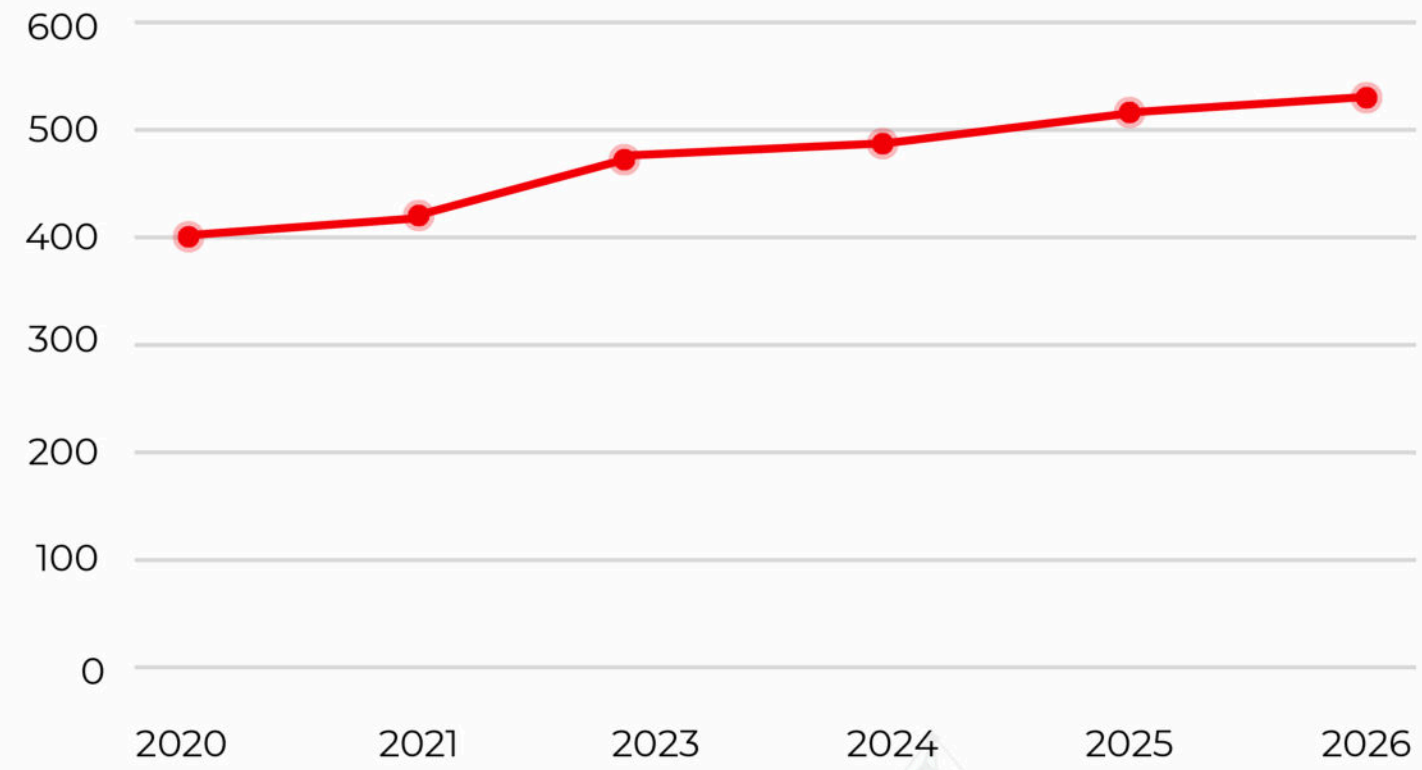
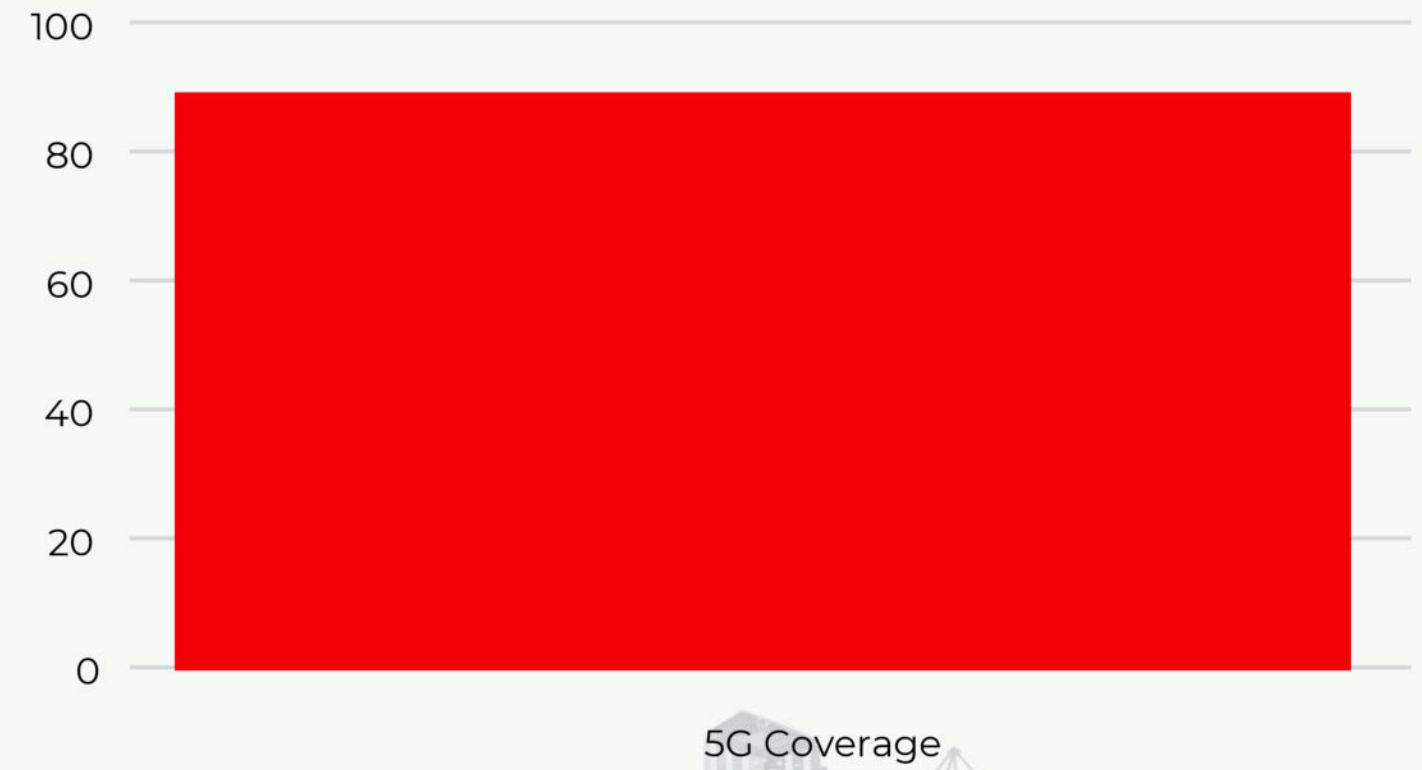


Fig: Subscriber Base

Source: TRAI

5G Population Coverage (Target Achievement)



Bharti Airtel

Use Case: AI-Based Network Optimization

AI-driven traffic management and predictive maintenance.

Integration

Analytics platforms integrated with network operations and spectrum management.

Output

Data traffic growth handled: The data highlights a robust upward trend in monthly network traffic throughput, with total data volume growing by ~21% year-on-year to reach a peak of over 200 PB/month by 2025

Reduced network downtime: By integrating AI-powered tools and machine learning for proactive monitoring and predictive maintenance, network operators can instantly synthesize incident data to resolve issues rapidly, thereby enhancing reliability and significantly reducing operational costs through automation.



Network Downtime Efficiency (Post-AI Integration)

2021 (Baseline) 100	2025 (Current) 31	Total Reduction 69%
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Downtime index (base 100)

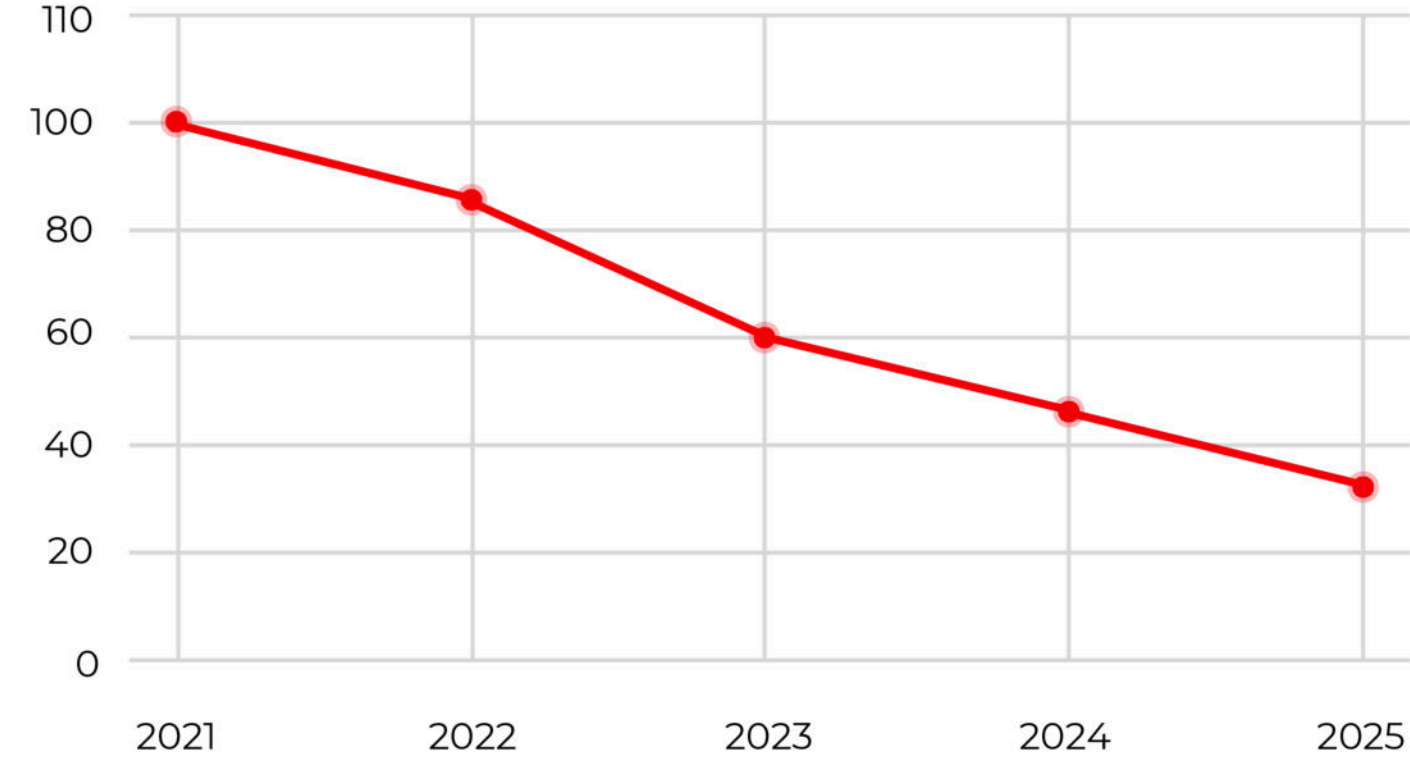


Fig. Network Downtime Efficiency



2021 (base) **100 PB** 2025 (peak) **207 PB** 5yr growth **+107%** Avg YoY **~20%**

Network Traffic Throughput (Indexed Growth)

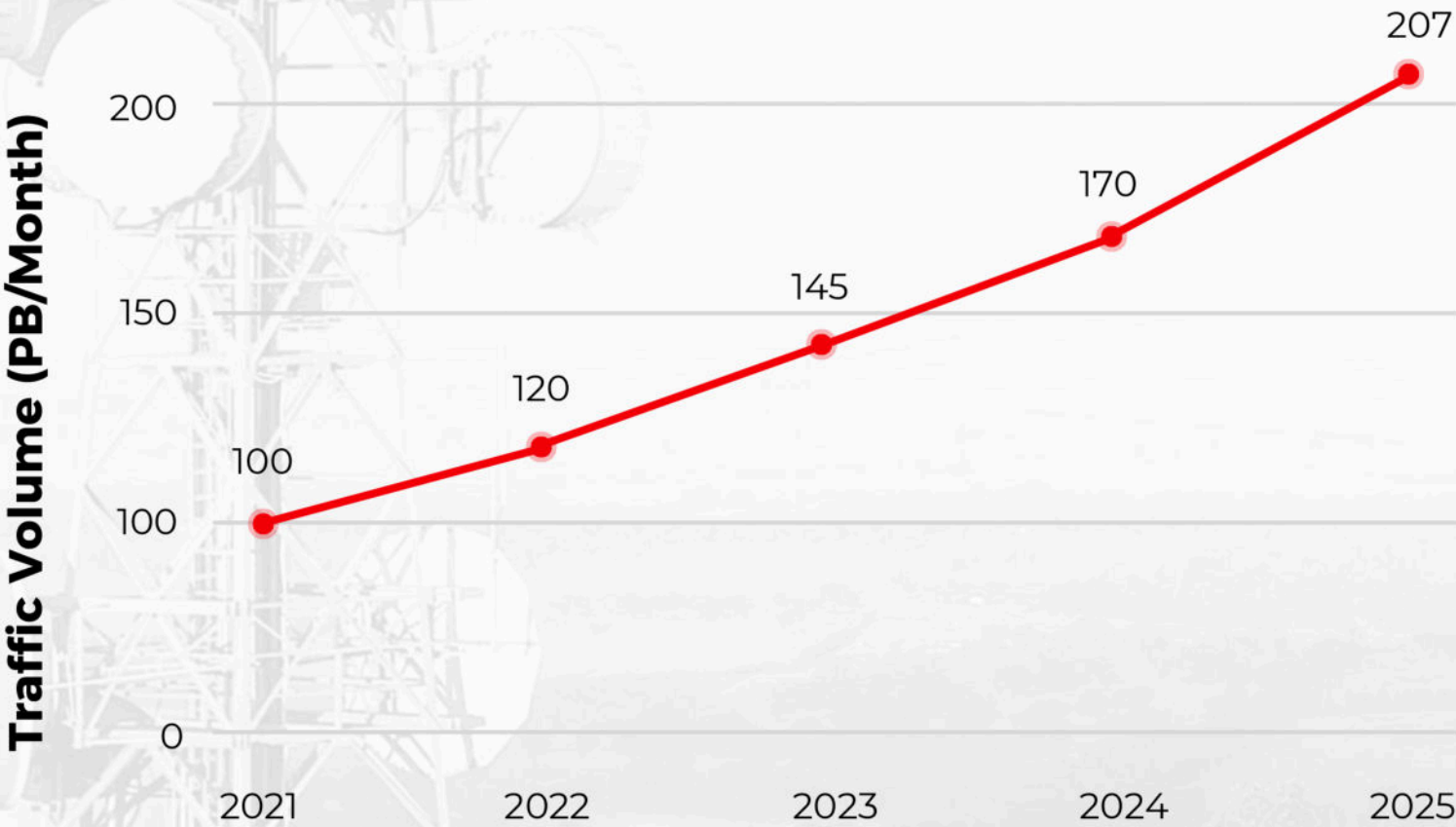


Fig. Network Traffic Throughput



Vodafone Idea

Use Case: Digital OSS/BSS Transformation

Unified billing and customer management systems.

Integration

IT platforms for real-time charging, provisioning, and churn analytics.

Output

- **Customer Retention:** Deployment of a Gen AI voicebot for porting requests boosted retention to 22% (a 1.75X increase over organic channels) and enhanced engagement by 8%.
- **Operational Costs:** Strategic process automation and IT platform optimization resulted in a 25% reduction in operational costs.
- **Manual Process Reduction:** Automation of network tasks and streamlined workflows reduced manual intervention by 30%, minimizing operational incidents.
- **Operational Efficiency:** Implementation of cloud-native scalability and zero-touch operations yielded up to 100% gains in operational efficiency.
- **ARPU in ₹200+ range:** Vodafone Idea has achieved a consistent upward trajectory in its Average Revenue Per User (ARPU), reaching ₹214 as shown in fig. by leveraging strategic tariff hikes, migrating subscribers to higher-value 4G and 5G plans, and improving the customer mix with a 14.2% increase in postpaid users.



Average Revenue Per User (ARPU)

2021 ARPU

₹145

Starting point

2025 ARPU

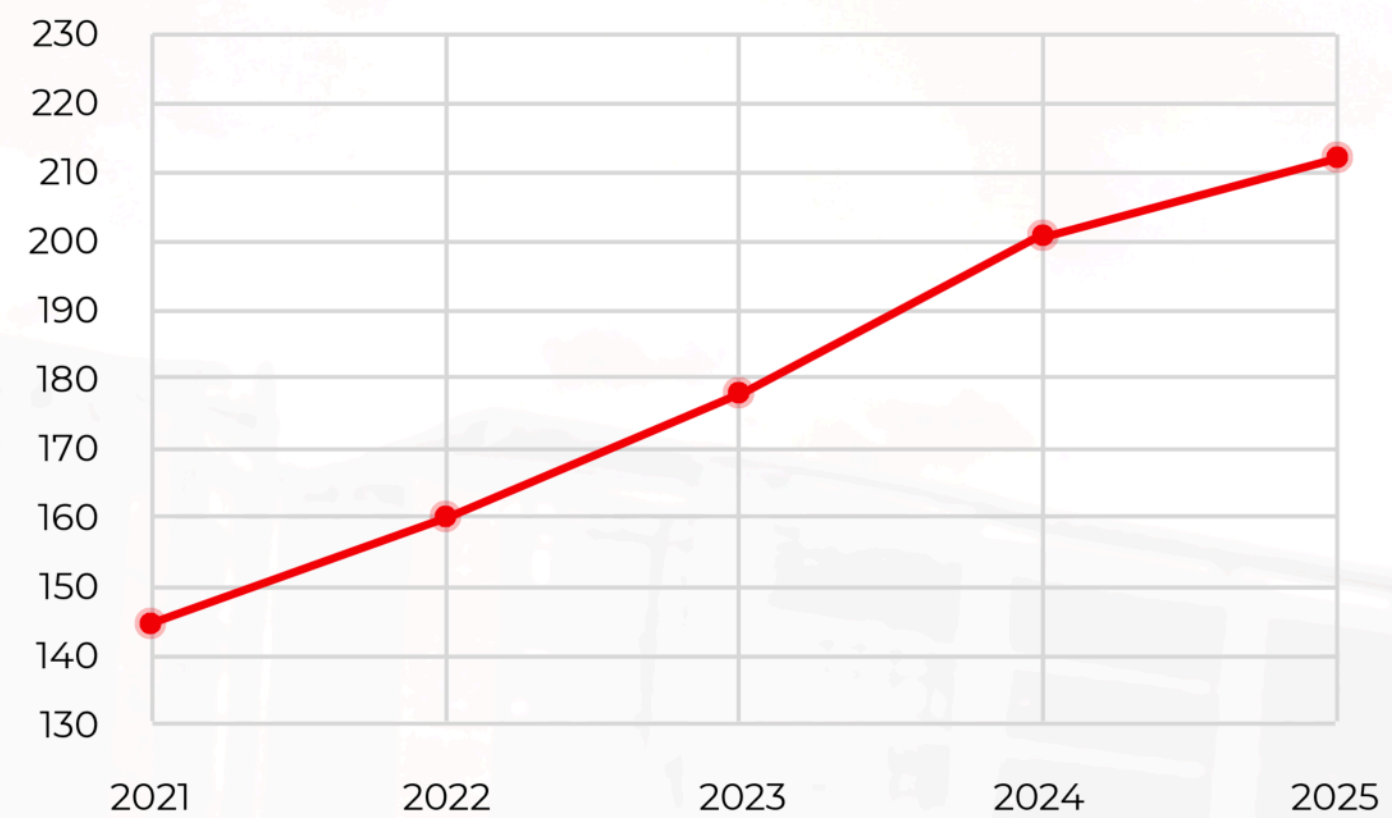
₹214

Current level

4-Year Growth

+48%

₹145 → ₹214



Vodafone Idea: OSS/BSS Transformation Impact

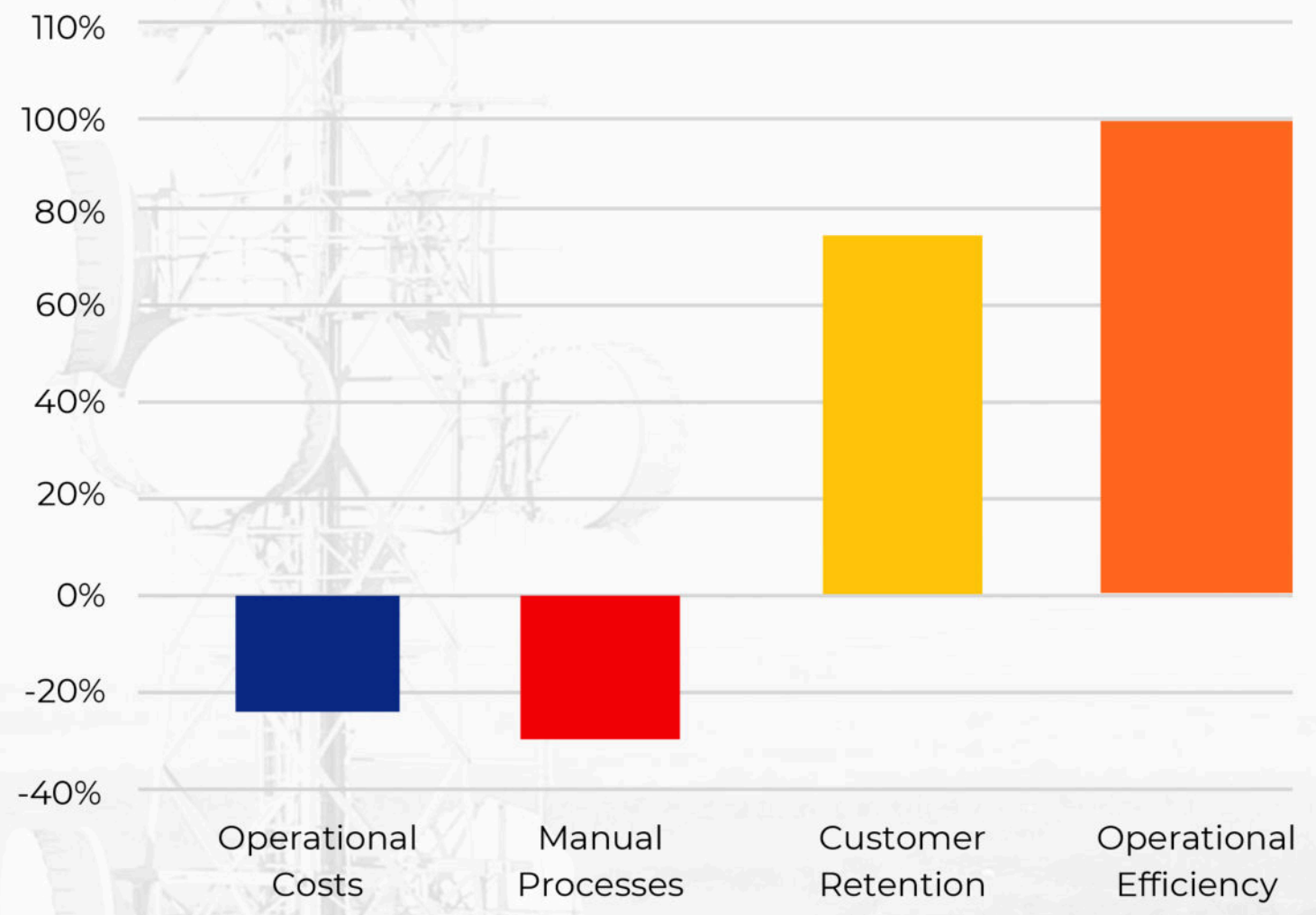
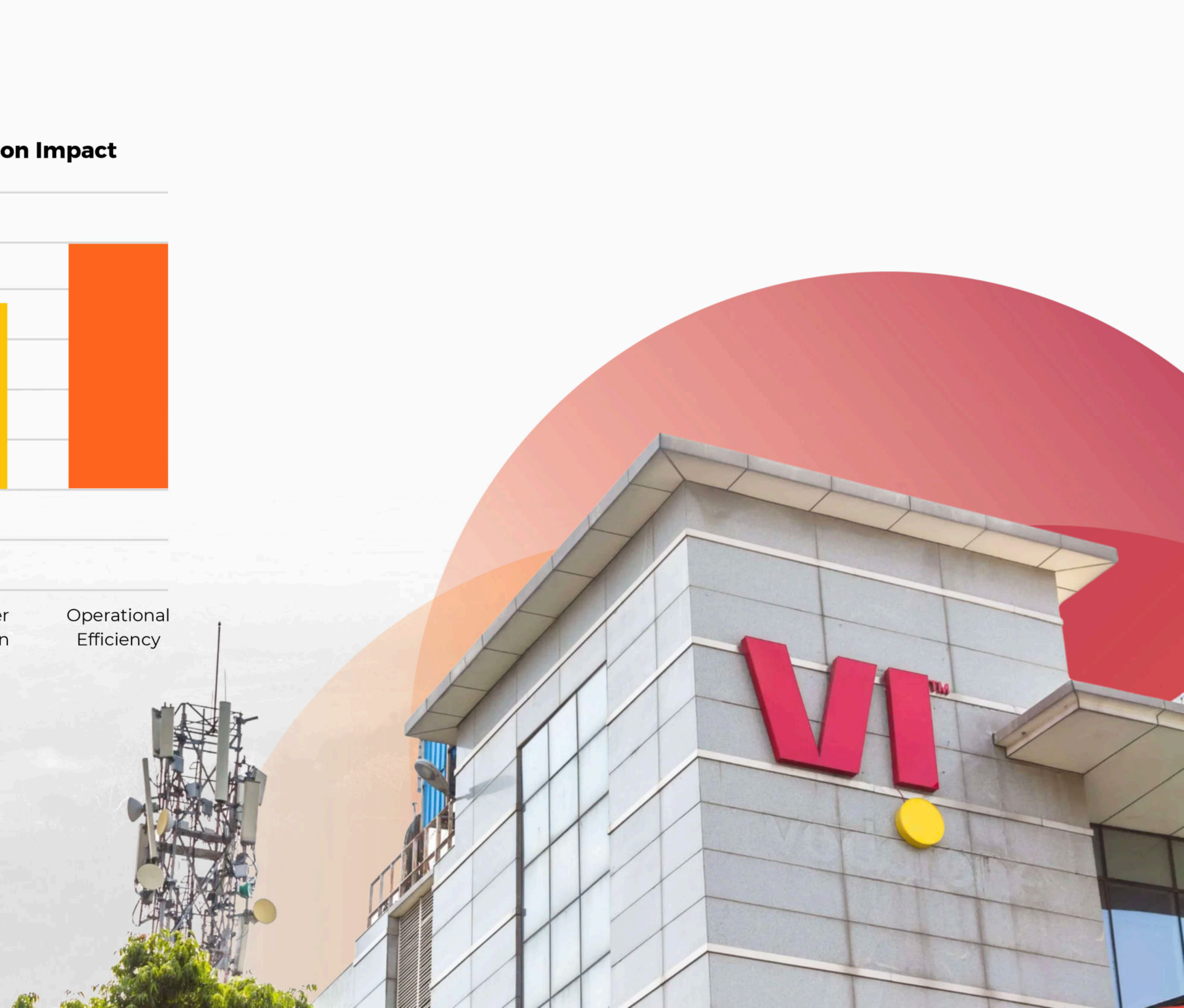


Fig. OSS/BSS Transformation Impact



BSNL

Use Case: Indigenous 4G Stack Deployment

Deployment of domestically developed telecom technology.

Integration

IT-led network management with software-defined architecture.

Output

- **Infrastructure Scale:** Deployment targeting 100,000+ planned 4G sites to modernize national connectivity.
- **Social Impact:** Prioritization of expanded rural coverage to bridge the digital divide in underserved regions.
- **Strategic Autonomy:** Significant reduction in dependency on international technology providers through a software-defined architecture.
- **Global Standing:** Implementation positions India as the fifth nation to possess a comprehensive, end-to-end indigenous telecom stack.



Impact on Global Vendor Dependency

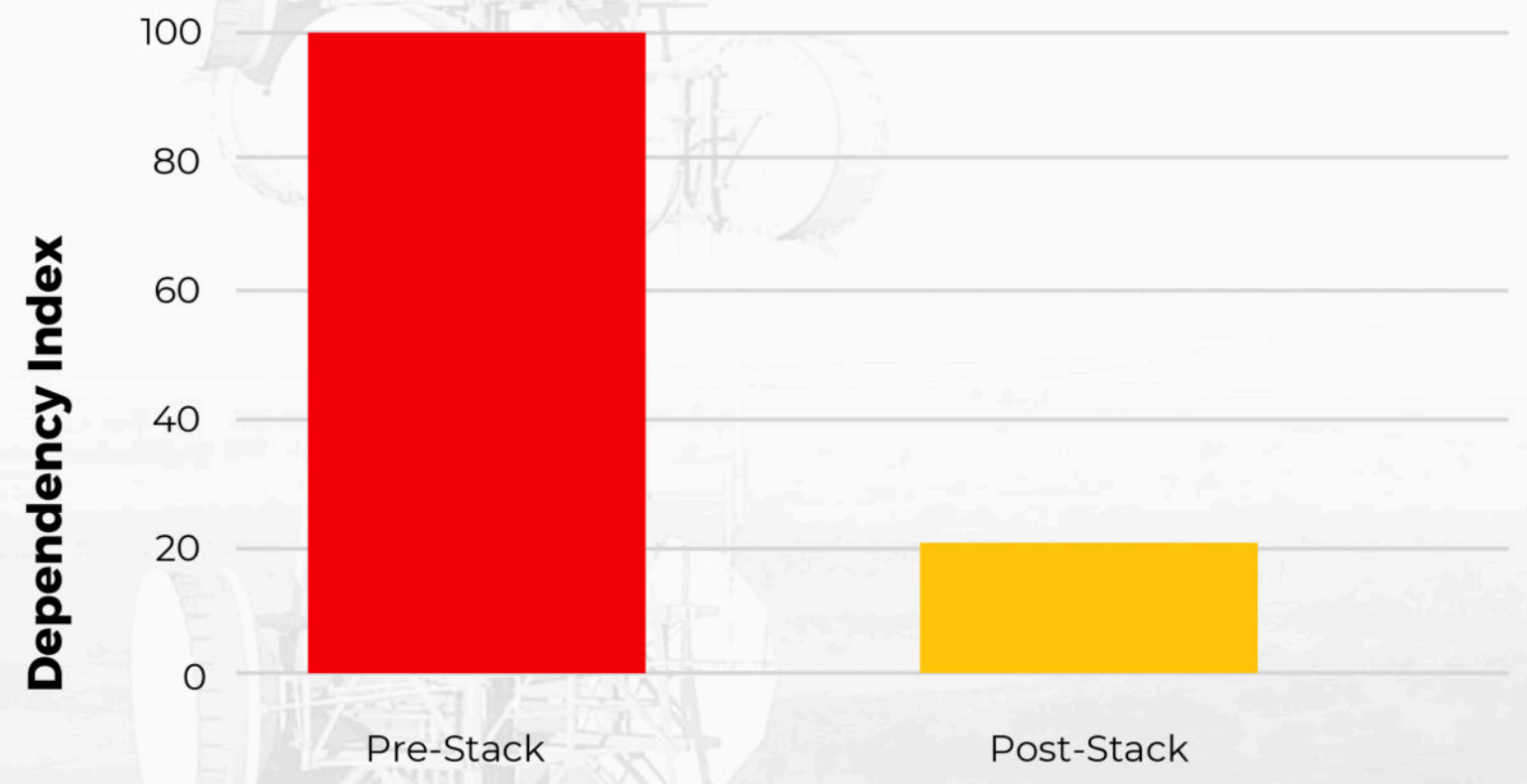


Fig. Global Vendor Dependency

Source: [PIB](#)



Conclusion

India's telecom sector has reached a point where the subscriber growth era is effectively closed. At 1.32 billion connections and 88 percent tele-density, the addressable population is largely served. Revenue growth from this point is driven by what each connection generates, not by adding connections.

The financial numbers confirm this shift. Gross revenue grew 10.72 percent year-on-year in FY2025 on the back of ARPU expansion, not volume. Voice is no longer a billing unit. Data consumption, enterprise connectivity, and platform-level services are the next revenue layer. Mobile data consumption is on track for INR 2.21 trillion by 2030.

5G infrastructure is in place. With 498,000 base stations and 99 percent district coverage, the physical network is deployed. It currently carries 32.15 percent of wireless data traffic, and that share will rise as 87 percent of new smartphone shipments are 5G-capable. The user migration is a function of device replacement cycles, not operator decisions.

At the network layer, the integration of IT and telecom is complete in operational terms. Cloud-native cores, AI-driven operations, and software-defined management are now standard deployments. The next competitive variable is what is built on top of this infrastructure: private enterprise networks, IoT platforms, and edge computing deployments.

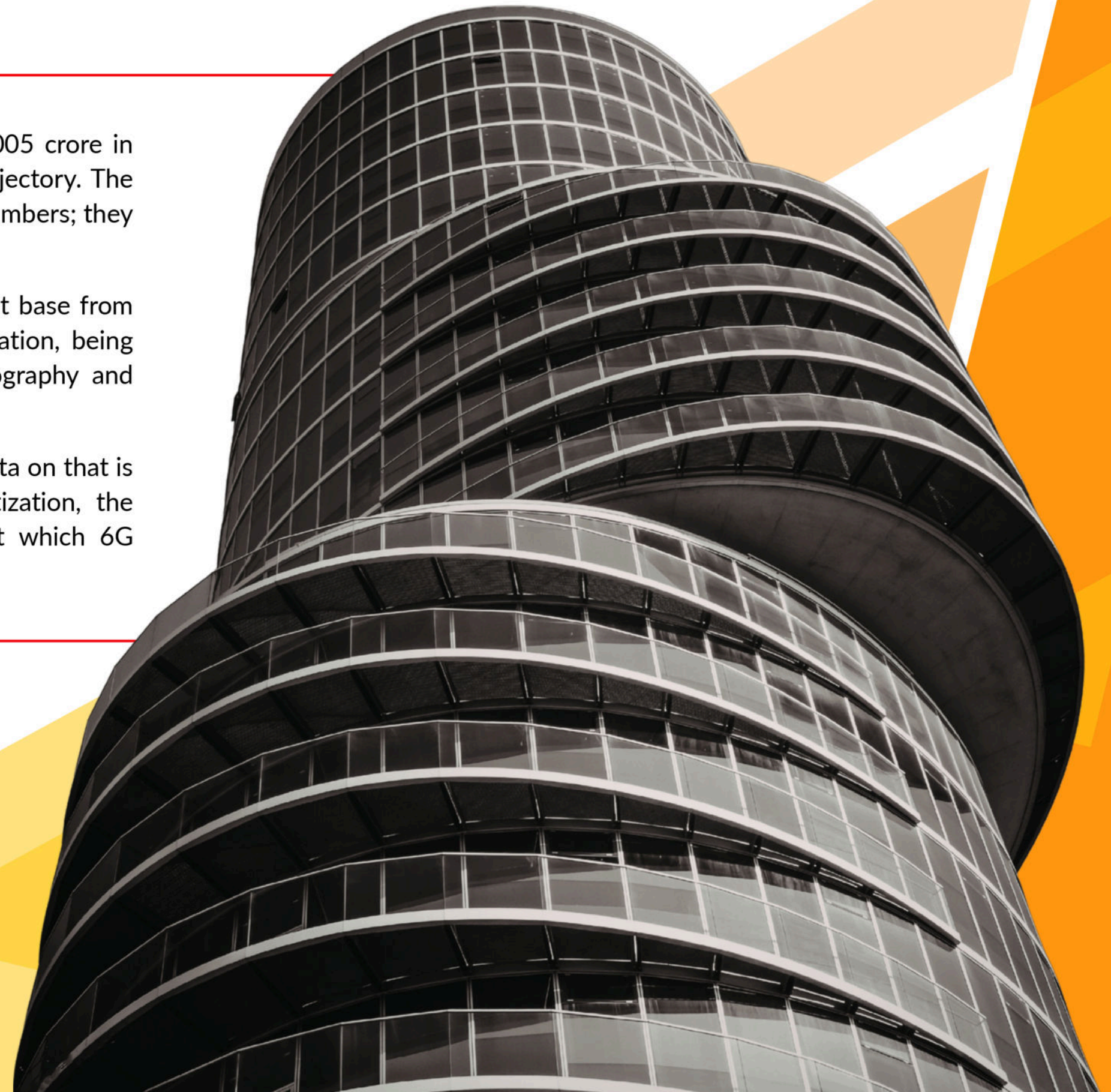
Telecom is now structural to public infrastructure. 130 billion digital payment transactions in FY2024, government identity platforms, and public service delivery systems all run on the same networks. This dependency is not incidental as it is by design and will deepen.



The investment position is clear. USD 40.07 billion in cumulative FDI and ₹81,005 crore in FY2026 government allocation signal that capital and policy are on the same trajectory. The sector is forecast to reach USD 72.32 billion by 2034. These are not aspirational numbers; they reflect compounding demand from an existing base.

6G specification work has begun. India's 5G infrastructure provides a deployment base from which 6G adoption can proceed without a structural reset. LEO satellite integration, being standardized within 5G and 6G frameworks, is directly relevant to India's geography and coverage gaps that terrestrial infrastructure alone cannot close.

The question for the next five to ten years is not whether the sector grows; the data on that is settled. The open variables are operator-level execution on enterprise monetization, the commercial performance of India's indigenous telecom stack, and the pace at which 6G investment cycles begin.



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COPO & Digital Twin Integrated Service Model

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Inductus GCC's Digital Twin and COPO (Company-Owned, Partner-Operated) Service Model creates a seamless, future-ready operational framework for global businesses setting up GCCs in India. The Digital Twin Process ensures real-time collaboration, decision-making, and operational efficiency by replicating physical systems in a virtual environment, enabling synchronized execution across multiple time zones. Meanwhile, the COPO Model allows MNCs to retain full ownership and strategic control while leveraging Inductus' expertise for execution, compliance, and scalability.

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