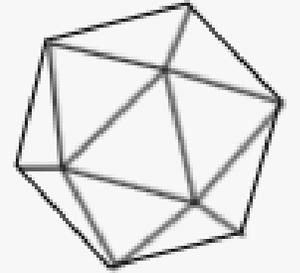




Jio – Building for Scale & Trust (Hyper Connected India)

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1. Introduction: Jio's Transformative Impact

India Before Jio: A Data-Starved Nation

High Data Costs & Limited Access

Mobile data was expensive (₹250-₹10,000/GB); users consumed only 240 MB/month, mainly on 2G/3G.

Low Internet Penetration & Digital Divide

India's global data traffic share was <1%; internet access was urban-centric, leaving rural areas underserved.



Jio's Entry: The Disruption Begins



01

Free Data & Aggressive Pricing

Jio launched with months of free data and voice, then offered ultra-low rates, forcing competitors to drop prices.



02

Pan-India 4G & Digital Ecosystem

Built a brand-new 4G network and offered apps like JioTV, Jio Cinema, JioSaavn, JioMoney, creating a full digital lifestyle.



03

Affordable Devices & Transition to 4G

JioPhone and JioBharat enabled 2G users to affordably transition to 4G networks, thus bridging the digital divide.

India After Jio: A Data-Rich Revolution



Massive Data Uptake & Global Leadership

Mobile data consumption surged from 200 million GB/month to over 1.5 billion GB/month; India became the world's largest mobile data consumer.



MSME Empowerment & Productivity Tools

Connectivity bundled with productivity tools, cloud services, and marketing platforms enabled MSMEs to thrive.

Affordable Access & Digital Inclusion

Data costs dropped to < ₹10/GB, democratizing internet access. Over 465 million wireless broadband users now rely on Jio, with better rural connectivity.





2. Building for Scale: Cloud-Native Architecture

Designing for Scale: Microservices



Multi-Access Edge Computing (MEC)

MEC supports low-latency applications like AR/VR, IoT, and autonomous systems, enhancing user experience.

Cloud-Native & Modular Deployment

Jio uses a microservices-based architecture for scalable deployment across thousands of sites.

Automation & Elastic Scalability

Zero-touch provisioning automates network site deployment; services automatically scale based on traffic.



3. Building Trust: Security & Identity



Secure Identity with JiID Platform

01.

Unified Identity System

JiID platform provides unified identity across telecom, retail, and media services.

02.

Streamlined Integration

Eliminates multiple logins and supports secure, scalable integration for partners, improving user convenience.

03.

Security & Resilience Measures

Quantum-safe encryption and AI-driven anomaly detection enhance security and resilience, protecting user data.

Jio TrueConnect: Blockchain Security



Spam Prevention & Trusted Communication

Blockchain-powered communication gateway prevents spam and ensures verified communication between enterprises and consumers.



User Privacy & Data Encryption

User privacy is protected through encrypted data storage on blockchain, enhancing trust and security.



4. API-Driven Ecosystem Integration (APIs as Strategic Assets)

Empowering Jio's Digital Ecosystem with Scalable, Secure and Cloud-Native API Management

API as Products

Designed for external consumption

APIs as Business Enablers

APIs allow teams to build new apps and services faster

APIs as Profit Centers

Pay-per-use: Charge based on API calls

APIs as Security Gateways

APIs enforce authentication and authorization

APIs as Data Channels

Real time data channels – APIs stream data between systems and apps

APIs as Integration Bridges

APIs wrap legacy systems for modern access

APIs for usage monitoring

Controls service usage by limiting the number of requests per user/app to protect against abuse & ensure fair access

APIs for enhanced experience

Tracks API usage, performance metrics, error rates to optimize performance and user experience

Key API Management



Identity Management

- Supports OAuth2, JWT, RBAC, SCIM
- Ensures secure & seamless integration our enterprise systems



Scalability

- Kubernetes clusters with DBs, NGINX reverse proxies & ISTIO service mesh
- Modular, scalable & independently deployable



Security

- Patch management
- Account and access re-certification
- Enhance observability

Open API Strategy



TM Forum Open API Leader

Jio is a global leader in TM Forum Open API certifications with thousands of certified APIs.



API Exposure for Developers

Jio exposes 5G network capabilities as RESTful APIs for developers, fostering innovation.



API Support for Use Cases

APIs support diverse use cases in AI, IoT, AR/VR, and smart cities, expanding application possibilities.



5. Innovation at Scale: AI, Edge & Blockchain

AI-Native Architecture for Network Optimization



Predictive Analytics for Congestion

Predictive analytics detect congestion and reroute traffic before users experience slowdowns.



Hosted Innovation Hub in Mumbai



AI for Network Monitoring & Healing

Jio uses AI to monitor, optimize, and heal its network, ensuring smooth operation.



Edge Computing for Streaming Innovation



Edge Computing for Streaming FIFA & IPL

JioCinema streamed FIFA World Cup 2022 and IPL 2024 in 4K to millions using edge compute and AI-optimized CDN.





Resilience and National-Scale Infrastructure



Geo-Redundant Data Centers

Geo-redundant data centers and multi-site deployments ensure uptime, guaranteeing reliability.



AI/ML for Network Optimization

AI/ML optimizes the network and enables self-healing systems, enhancing performance.



Blockchain Solutions for Security

Blockchain solutions ensure secure transactions and manage identities safely, improving security.



6. Case Study: IPL 2024 Streaming on Jio Cinema



Technology Stack & Architecture

01

Elastic Cloud Architecture

Jio used elastic cloud architecture to scale resources dynamically during peak match hours[1].

02

Multi-CDN Strategy

Multi-CDN strategy ensured content delivery from edge locations to reduce buffering .

03

Edge Computing & 5G Deployment

Jio deployed hundreds of MEC (Multi-access Edge Computing) centers across India .



Empowering MSMEs with Digital Solutions

Affordable Connectivity & Bundled Solutions

Affordable Connectivity via Jio Business

JioBusiness offers enterprise-grade fiber broadband & voice services at 1/10th the market price.

Bundled MSME Solutions

MSMEs now get productivity tools, cloud services, and marketing platforms bundled with connectivity.

Cloud and Collaboration tools for Remote Work

JioCloud and JioMeet enable remote work, data storage, and secure communication that was previously unaffordable.

Digital Payments & Online Presence



Facebook Collaboration for Growth

Jio's partnership with Facebook aims to support millions of small businesses by integrating WhatsApp Business and digital storefronts.



Digital Payments and Discoverability

Small businesses can now accept payments digitally and be found online, leveling the playing field.



Enhanced Security & Support

JioBusiness includes cybersecurity solutions and 24/7 support, helping MSMEs safeguard their digital assets.



Energy Sector Innovations & Sustainability

Solarisation Initiatives & Net Zero

Solar Installations & Green Energy

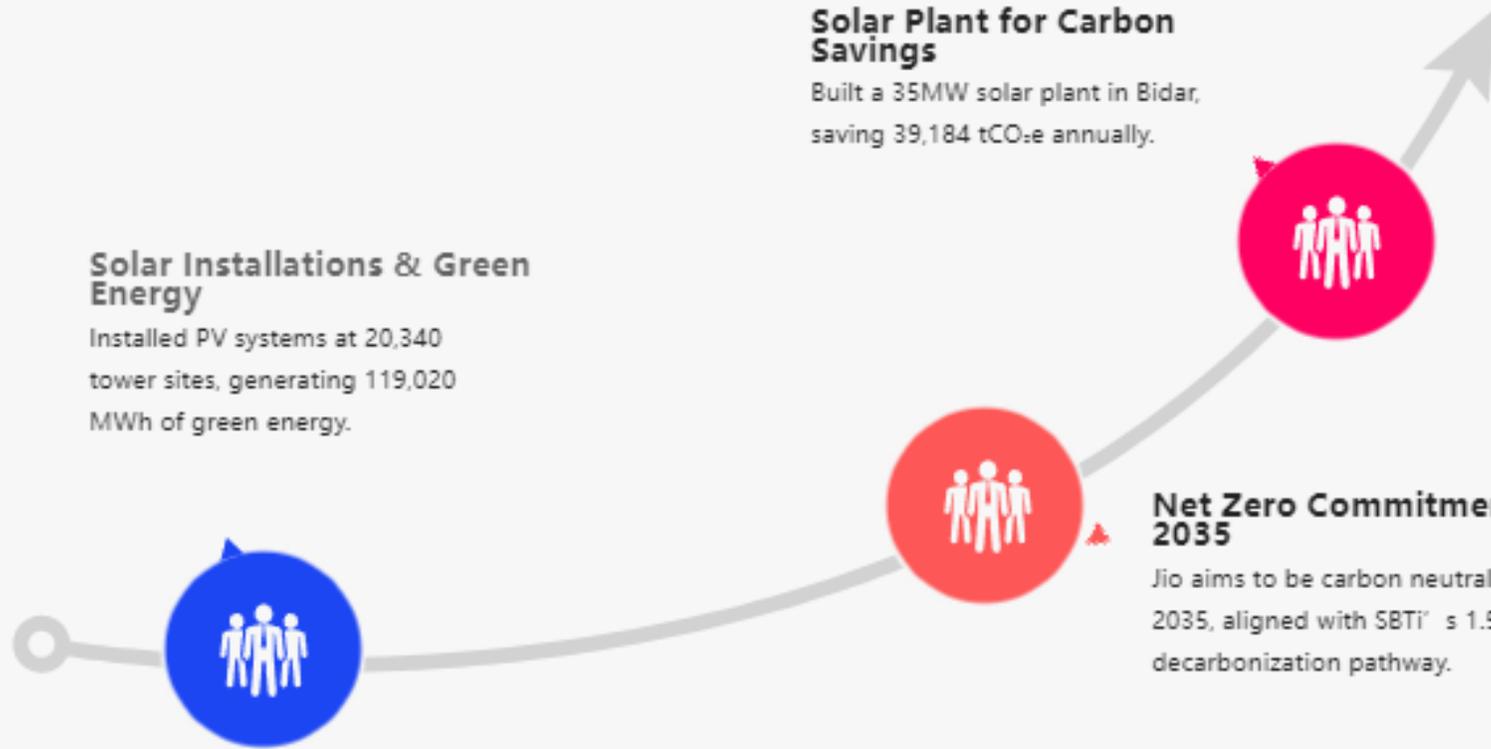
Installed PV systems at 20,340 tower sites, generating 119,020 MWh of green energy.

Solar Plant for Carbon Savings

Built a 35MW solar plant in Bidar, saving 39,184 tCO₂e annually.

Net Zero Commitment by 2035

Jio aims to be carbon neutral by 2035, aligned with SBTi's 1.5°C decarbonization pathway.



Smart Grids & IoT Integration

5G-Powered Smart Grids

Jio's private 5G stack enables real-time monitoring, predictive maintenance, and grid optimization for utility companies.

IoT Integration for Energy Automation

Sensors and edge analytics automate energy distribution and consumption, supporting smart cities and industrial setups.





Conclusion: Jio's Vision for Hyper-connected India

Pillars of Jio's Approach



Cloud-Native Platforms

Platforms for agility and scalability.



Open APIs

APIs for rapid innovation and integration.



Resilient infrastructure

Infrastructure for national-scale reliability.



Unified identity systems

Systems for seamless access.



AI and edge computing

Computing for intelligent automation.

The Future is Hyperconnected India

Continued Innovation and Growth

Looking forward with digital transformations.





Thank You