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Moving the Needle

July 2026 Edition

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As we cross the half-year mark of 2026, we bring to you the July edition of *Moving The Needle,* it is difficult to ignore the pace at which the world is changing. Over the past few months, global headlines have been dominated by geopolitical developments, from ongoing tensions in West Asia to shifts in trade relationships and supply chains among major economies, causing ripple effects for households. These events are not only reshaping how countries think about economic security, technology, energy, food systems, and strategic partnerships, but also how the common people are bracing for change and uncertainty.

At the same time, another transformation is unfolding across the world, one that is quieter but even more profound: Artificial Intelligence and digital technologies. What was once viewed as a futuristic concept is now becoming a core driver of competitiveness, productivity, governance, and service delivery. Countries are investing heavily in digital infrastructure, AI capabilities, and technology-led innovation to strengthen resilience and accelerate growth.

Against this backdrop, this edition brings together perspectives on some of the most important transitions underway across infrastructure, technology, environment, and healthcare.

The article "From Roads to Rockets: India's PPP Journey Enters the Space Age" explores how India's Public-Private Partnership model is evolving from traditional infrastructure development to high-technology sectors such as space, opening new opportunities for innovation, commercialization, and private investment.

In "Can Digital Twins Help India Breathe Better?", the authors examine how digital twins and predictive technologies can help cities move beyond monitoring pollution towards forecasting risks and enabling proactive environmental governance.

The article "The Digital Health Dividend: Turning Technology Investments into Health Outcomes" highlights how India's growing digital health ecosystem is improving access, efficiency, and health outcomes, while outlining the policy actions needed to fully realise the benefits of digital health infrastructure.

Across all these stories, the binding thread is that the future will belong to those who can effectively combine policy, technology, innovation, and partnerships. Whether it is launching satellites, improving urban air quality, strengthening healthcare delivery, or building digital public infrastructure, the focus is increasingly shifting from isolated initiatives to integrated solutions.

We hope this edition provides useful insights into these evolving trends and stimulates new ideas for policymakers, businesses, and practitioners alike.

Happy Reading

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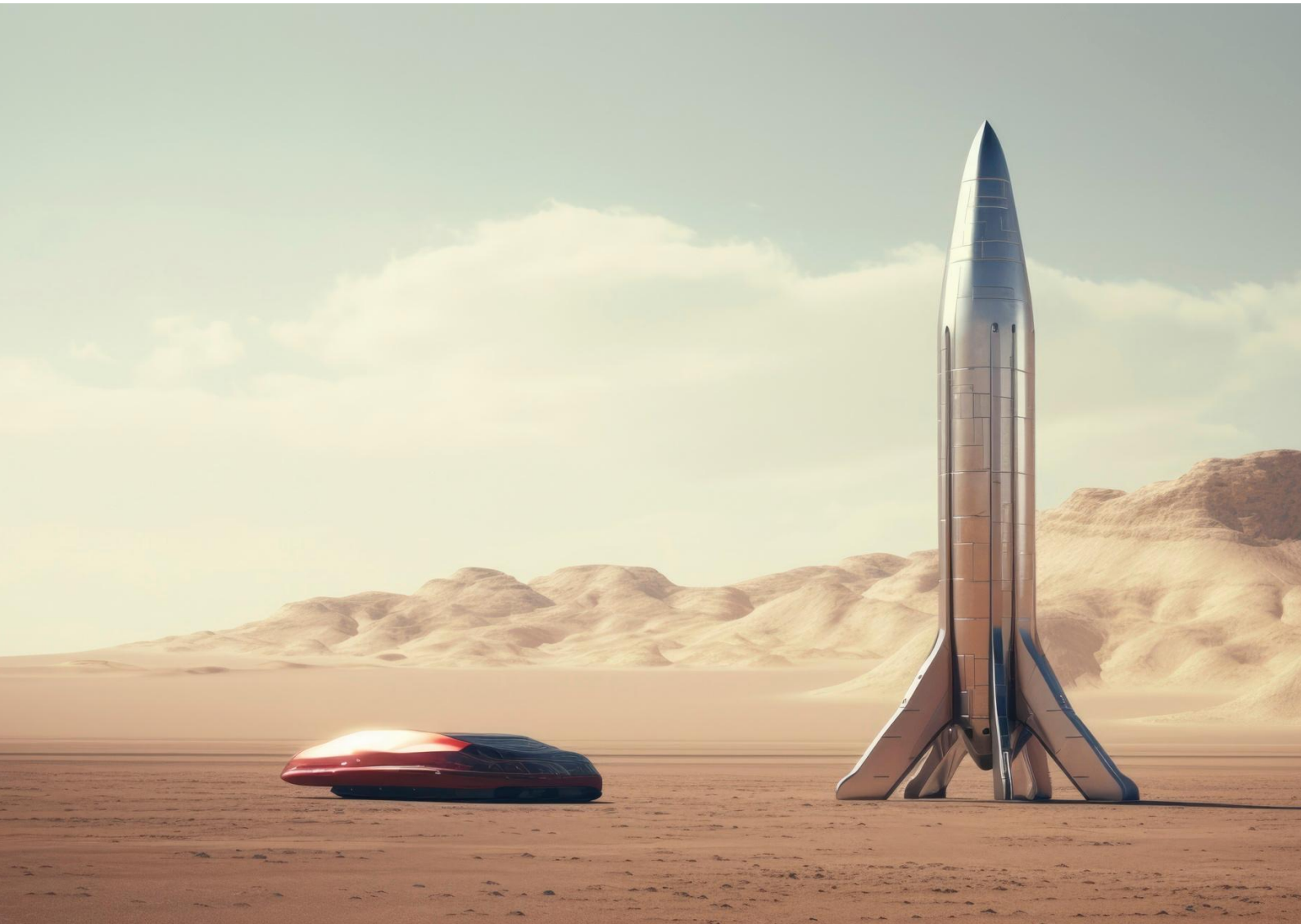
01

From Roads to Rockets:

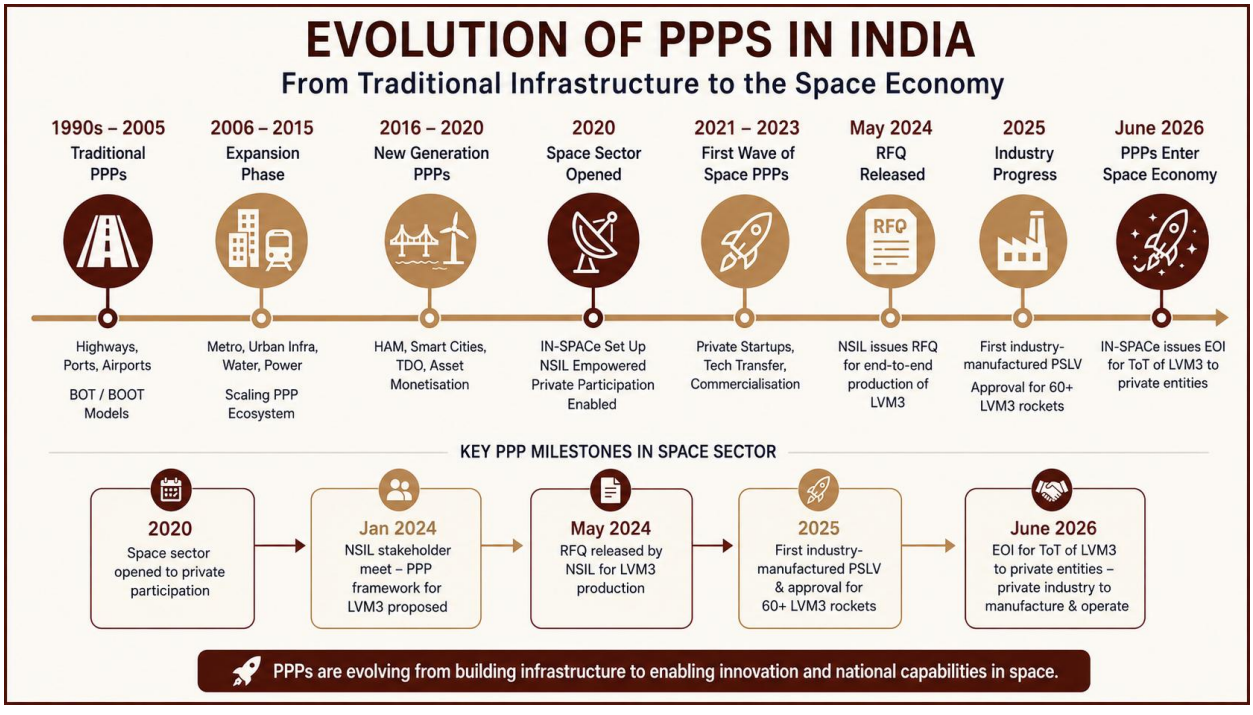
India’s PPP Journey Enters the Space Age



India's PPP Journey: From Infrastructure Creation to Technology Partnerships

Public-Private Partnerships (PPPs) have been at the heart of India's infrastructure development over the last three decades. Introduced in the late 1990s to bridge the country's infrastructure deficit, PPPs found their earliest and most successful application in roads and highways, led by the National Highways Authority of India (NHAI) through BOT and BOOT models. During the Eleventh and Twelfth Five-Year Plans, India emerged as one of the world's largest PPP markets, with over 1,800 projects spanning roads, ports, airports, power, and urban infrastructure. Roads alone accounted for nearly 60% of total PPP investments.

Over time, the PPP framework evolved from asset creation to asset monetisation through instruments such as Toll-Operate-Transfer (TOT) concessions and Infrastructure Investment Trusts (InvITs). Increasingly, PPPs have moved beyond conventional infrastructure into sectors that require technological capabilities and innovation. The opening of the space sector marks the latest chapter in this evolution.



ISRO's Initial Steps Towards Commercialization

For decades, India's space programme was driven almost exclusively by the Indian Space Research Organisation (ISRO), which built indigenous capabilities in launch vehicles, satellites and downstream applications. Recognising the need to scale up and capture a larger share of the global space economy, the Government of India initiated landmark reforms in 2020 . The establishment of the Indian National Space Promotion and Authorisation Centre (IN-SPACe) and the enhanced role of NewSpace India Limited (NSIL) enabled private participation across the space value chain.

The reforms marked a shift in the government's role from sole operator to facilitator, paving the way for greater public-private collaboration in strategic and high-technology domains.

Private participation in the space programme is not entirely new. Over the years, ISRO has increasingly relied on industry partners for manufacturing subsystems and components. However, a major shift came with the transfer of end-to-end Polar Satellite Launch Vehicle (PSLV) production to a consortium led by Hindustan Aeronautics Limited (HAL) and Larsen & Toubro (L&T) . By 2025, the industry had received approval for manufacturing over 60 PSLV rockets , representing one of the largest technology transfer exercises undertaken by ISRO.

Another milestone came in 2024 when IN-SPACe selected a consortium led by Pixxel, along with PierSight, SatSure, and Dhruva Space, for the development and operation of an Earth Observation satellite constellation under a PPP framework. The project, involving investments of over ₹1,200 crore demonstrated the government's willingness to leverage private capital and innovation to create national space infrastructure.

LVM3: The Next Big PPP Opportunity

Building upon these initiatives, in June 2026 IN-SPACe issued an Expression of Interest (EOI) for the transfer of technology (ToT), realization, operation, and commercialization of the Launch Vehicle Mark-III (LVM3), India's heaviest operational launch vehicle. The LVM3, which successfully powered the Chandrayaan-3 mission, represents decades of indigenous technological development.

Under the proposed framework, private entities will be offered the opportunity to assimilate ISRO's proven technology and independently undertake manufacturing and commercial launch operations. ISRO will provide handholding support for up to 42 months or until two successful launches are completed. The initiative marks a significant transition from vendor participation to industry-led ownership and operations and reflects the government's broader objective of enabling the commercialisation of mature technologies while allowing ISRO to focus on next-generation research.

What's Next for PPPs in the space sector?

The opening of the space sector presents opportunities extending well beyond launch vehicles. Areas such as satellite manufacturing, Earth observation constellations, satellite communications infrastructure, ground stations, downstream geospatial services, space situational awareness, and future reusable launch systems are expected to see increased public-private collaboration. With India's space economy projected to grow from approximately USD 8 billion currently to nearly USD 44 billion by 2033 . These segments are likely to attract substantial private investment.

India's PPP journey has traversed an extraordinary path, from highways and airports to rockets and satellites. What began as a mechanism to bridge infrastructure gaps has evolved into a framework for innovation and technology commercialization. As the recent LVM3 EOI demonstrates, the next phase of India's PPP story may well be written beyond Earth's atmosphere.

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Can Digital Twins Help India Breathe Better?

India Has the Data. The Next Step Is Turning It into Foresight.

Air pollution remains one of South Asia's most pressing development challenges. The World Bank estimates that it contributes to nearly 2 million premature deaths each year and imposes significant health and economic costs across the region. The scale of the challenge was evident in May 2026, when real-time global air quality rankings reported that 21 of the world's 25 most polluted cities were located in India. More concerningly, these rankings emerged outside the traditional winter pollution season, highlighting how poor air quality has become a year-round challenge for many Indian cities.

Delhi's air quality episode in May 2026 offered a glimpse of this emerging reality. Heatwave conditions, dust-laden winds, and local emissions pushed the Air Quality Index (AQI) into the "poor" category, triggering Stage 1 of the Graded Response Action Plan (GRAP). Together, these developments point to an important conclusion: while India has made significant progress in monitoring air pollution, managing it remains an increasingly complex governance challenge.

These developments present an interesting paradox. India has significantly improved its ability to monitor pollution. The country now operates more than 500 Continuous Ambient Air Quality Monitoring Stations (CAAQMS), alongside an expanding network of low-cost sensors, satellite observations, and digital AQI platforms. Yet while visibility has improved, the ability to anticipate and prevent pollution episodes remains limited.

The challenge is further complicated by the fact that air pollution does not respect administrative boundaries. As highlighted by the World Bank, pollutants often travel across districts and states before affecting local air quality, making forecasting, coordination, and interstate decision-making as important as measurement itself. The next frontier in air quality governance therefore lies not in collecting more data, but in transforming existing data into actionable intelligence.

Enter the Digital Twin

If air quality governance is to move from monitoring pollution to forecasting risk, cities require tools capable of integrating multiple datasets, modelling future conditions, and evaluating policy choices before they are implemented. This is where digital twins become relevant.

A digital twin is a dynamic digital replica of a physical system that continuously updates itself using real-world data. In the context of air quality management, it could combine information from pollution sensors, weather stations, satellite imagery, traffic systems, industrial emissions records, and construction activity to create a living model of a city's environmental conditions.

Unlike traditional dashboards, digital twins enable simulation and forecasting. Policymakers can test the likely impact of interventions before implementing them. For example, they could assess whether restricting heavy vehicles, controlling construction activity, or altering traffic flows would meaningfully improve air quality under different weather conditions.

The concept is no longer theoretical. Singapore's Virtual Singapore initiative, along with digital twin programmes in Finland and South Korea, demonstrates how real-time data can support more proactive urban governance. While these projects focus on a broad range of urban challenges, they illustrate the potential of simulation-based decision-making.

Why India Is Well Positioned

The idea of a digital twin for air quality may sound futuristic, but many of its building blocks already exist.

India's expanding environmental monitoring networks generate vast volumes of data. Cities are increasingly deploying intelligent traffic management systems, GIS-enabled planning tools, IoT sensors, and integrated command-and-control centres under the Smart Cities Mission. Simultaneously, policymakers are placing greater emphasis on airshed-based approaches to air quality management.

The challenge is no longer the availability of information. Rather, it is the fragmentation of data across institutions, platforms, and sectors. Information related to traffic, weather, emissions, construction activity, and urban infrastructure often resides in separate systems with limited interoperability.

Much like India's Digital Public Infrastructure revolution connected previously fragmented systems in payments, identity, and service delivery, digital twins offer an opportunity to bring together environmental datasets within a common decision-making framework.

Looking Ahead

Consider Delhi's recent air quality episode. Rather than responding after pollution levels deteriorated, what if policymakers could have assessed the likely impact of heatwaves, dust events, traffic patterns, and local emissions days in advance? What if alternative interventions could have been tested virtually before conditions reached critical levels?

This is the promise of digital twins. They will not eliminate air pollution on their own, nor can technology substitute for effective policy. However, they offer a pathway towards a more predictive and preventive model of governance, one where cities can anticipate risks, evaluate interventions, and act before pollution becomes a public health emergency.

India's air pollution challenge is no longer primarily a data deficit problem. Increasingly, it is a data integration, prediction, and response problem. As cities become larger, denser, and more climate-sensitive, the question is no longer whether we can measure the air we breathe. It is whether we can transform data into foresight, enabling cities to anticipate and prevent pollution before it becomes a public health emergency.

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The Digital Health Dividend:

Turning Technology Investments into Health Outcomes

India's healthcare system serves **over 1.4 billion people** across **28 States and 8 Union Territories**, making it one of the world's most **complex and diverse healthcare ecosystems**. Over the past decade, the Government of India has driven a significant **digital transformation in healthcare** through flagship initiatives such as the **Ayushman Bharat Digital Mission (ABDM)**, the **National Health Stack**, **CoWIN**, **eSanjeevani**, and the **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)**. These programs form the world's largest **government-led digital health ecosystem**, using **Digital Public Infrastructure (DPI)** to enhance **healthcare accessibility, affordability, efficiency, and quality** at scale. The resulting measurable outcomes have established India as a **global leader in digital health innovation**, large-**scale healthcare delivery**, and **data-driven health governance**.

The Burden: India's Healthcare Challenge

India has made progress in expanding healthcare coverage and improving health outcomes, but several structural challenges remain. Almost half of all health spending, **about 43.4%**[1], **comes directly from citizens' pockets**, which puts a heavy financial strain on families in poverty each year. Meanwhile, **non-communicable diseases now cause 62% of all deaths**[2] in India, adding more pressure to the healthcare system and long-term care services.

In the past, the lack of a connected digital health ecosystem led to fragmented patient records and limited information sharing among healthcare providers, contributing to repeated tests, delayed treatment decisions, and suboptimal care coordination. These challenges have underscored the importance of the **Ayushman Bharat Digital Mission (ABDM)**, which seeks to build a connected and interoperable digital health ecosystem that enhances care continuity, strengthens health system efficiency, and improves access to quality healthcare for every citizen.

Unlocking the Digital Health Dividend in India

India's digital health transformation shows how technology can help solve long-standing healthcare problems for large populations. For many years, patients struggled with scattered health records, difficulty finding specialists, complicated paperwork, and major barriers to good care. Now, with platforms like **ABDM, PMJAY, CoWIN, and eSanjeevani**, India is creating a digital health system that connects citizens, healthcare providers, insurers, and the government. This makes healthcare easier to access, more efficient, and focused on patients' needs.

These platforms enable the sharing of health records, telemedicine, digital insurance processing, and real-time health data exchange. This improves healthcare at every stage. People get easier access to services and better financial protection. Providers can make more informed decisions, and governments can use real-time data to monitor programs and plan public health efforts. All these efforts are building a **Digital Health Dividend**, where investments in "***Technology are translating into better health outcomes, stronger health system performance, greater transparency, and more equitable access to healthcare***" for millions of Indians.

The benefits extend across all stakeholders:

- **Citizens:** Easier access to healthcare services, portable digital health records, reduced travel and waiting times, and greater financial protection.
- **Healthcare Providers:** Access to comprehensive patient information, improved care coordination, streamlined workflows, and better clinical decision-making.
- **Governments:** Real-time data for programme monitoring, disease surveillance, resource planning, and evidence-based policymaking.
- **Insurers and Payers:** Faster claims processing, reduced fraud and leakages, improved transparency, and enhanced operational efficiency.
- **Healthcare Ecosystem:** Greater interoperability, seamless data exchange, improved service delivery, and stronger health system resilience.
- **Researchers and Innovators:** Access to anonymized health insights, enabling data-driven innovation, public health research, and development of next-generation healthcare solutions.

Policy Imperatives to Maximise Indias Digital Health Dividend

1. Strengthen Governance & Interoperability

- Ensure seamless integration of ABDM with AB-PMJAY, eSanjeevani, and other schemes.
- Develop ethical guidelines for AI, telemedicine, and data use.

2. Drive Citizen Demand & Equity

- Launch nationwide IEC campaigns on ABHA benefits (portability, reduced duplicates, teleconsultation).
- Integrate ABHA into insurance, pharmacies, and wellness services.
- Prioritise rural/low-literacy users via ASHA workers, vernacular tools, and last-mile support.

3. Infrastructure & Capacity Building in hard-to-reach areas

- Accelerate rural connectivity and improve the availability of devices
- Mandate digital health training in medical curricula and for professionals.
- Scale successful pilots in NCDs, maternal health, and chronic care.

4. Innovation & Public-Private Partnerships

- Create regulatory sandboxes and funding for ABDM-integrated startups.
- Promote outcome-based PPPs for AI diagnostics, remote monitoring, and e-pharmacy.
- Encourage “digital-first” models instead of add-ons.

5. Monitoring, Alignment & Leadership

- Link digital health to National Health Policy, Universal Health Coverage, and economic goals (productivity & demographic dividend).
- Establish clear KPIs for adoption, outcomes, cost savings, and equity with regular evaluation.
- Position India as a global digital health leader through international collaboration.

6. Integrate Digital Health with Health Financing and Service Delivery

- Link digital health systems with insurance schemes, claims processing, beneficiary management, and care pathways to improve efficiency and accountability.

Implementing these policy imperatives is essential to unlock India's digital health dividend. By strengthening governance and interoperability, incentivising adoption, empowering citizens, and fostering innovation through public-private partnerships, India can build a seamless, efficient, and equitable digital health ecosystem. This will deliver major cost savings, better health outcomes, and reduced out-of-pocket expenses while generating broader economic gains positioning digital health as a key driver of Universal Health Coverage. Thus, India's Digital Health Dividend demonstrates how technology, when deployed at scale, can transform healthcare delivery and build a more connected, resilient, and inclusive healthcare system for the future.

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Primus Outreach

ASSOCHAM and Primus Partners Hosted 6th Edition of The HealthMeet & Excellence Awards 2026 in Kolkata

ASSOCHAM, in association with Primus Partners as the Knowledge Partner, hosted the 6th edition of The HealthMeet & Excellence Awards 2026 in Kolkata on 29th May 2026. The event brought together policymakers, healthcare leaders, technology experts, pharmaceutical stakeholders, and innovators to deliberate on the growing role of Artificial Intelligence and digital technologies in transforming India's healthcare ecosystem.

The event witnessed the release of the ASSOCHAM–Primus Partners knowledge report titled "AI in Healthcare: From Instinct to Inference", by Dr. Indranil Khan, Member of Legislative Assembly, West Bengal. The report is a comprehensive study examining the evolving role of AI, digital health infrastructure, telemedicine, diagnostics, and data-driven healthcare delivery in India.

The conference featured distinguished speakers and healthcare leaders including Prof. (Dr.) Sukumar Mukherjee, renowned physician; Dr. Indranil Khan, Hon'ble Member of Legislative Assembly, West Bengal; Dr. Ajay Swaroop, Chairman – Board of Management, Sir Ganga Ram Hospital; and Dr. Rupali Basu, Regional Business Head (East & AP), HCG Cancer Hospital, among others. The key note address was given by Mr. Avijit Dhar, Executive Director & CTO, Primus Partners

The event had focused plenary sessions on "Digital Health & Human-Centered AI: The Infrastructure, the Ethics, and the Equity Imperative" which was moderated by Mr. Avijit Dhar, Executive Director & CTO, Primus Partners . The panellists included Dr. Ajay Swaroop, Chairman – Board of Management, Sir Ganga Ram Hospital, Mr. Balihar Singh Virk, AVP – Corporate IT, C K Birla Hospitals and Mr. Avik Ghose, Research Head, Healthcare & Med Tech, TCS

The HealthMeet & Excellence Awards 2026 served as a collaborative platform for discussing actionable pathways toward a digitally enabled, resilient, and equitable healthcare ecosystem for India.

List of Abbreviations

Abbreviation	Definition
AB-PMJAY	Ayushman Bharat Pradhan Mantri Jan Arogya Yojana
ABDM	Ayushman Bharat Digital Mission
ABHA	Ayushman Bharat Health Account
AI	Artificial Intelligence
AQI	Air Quality Index
ASHA	Accredited Social Health Activist
BOOT	Build-Own-Operate-Transfer
BOT	Build-Operate-Transfer
CAAQMS	Continuous Ambient Air Quality Monitoring Stations
CoWIN	COVID Vaccine Intelligence Network
DPI	Digital Public Infrastructure
EOI	Expression of Interest
ESDM	Electronics System Design and Manufacturing
GCC	Global Capability Centre
GIS	Geographic Information System
GRAP	Graded Response Action Plan
HAL	Hindustan Aeronautics Limited
IEC	Information, Education and Communication
IN-SPACe	Indian National Space Promotion and Authorisation Centre
InvIT	Infrastructure Investment Trust
IoT	Internet of Things
ISRO	Indian Space Research Organisation
KPI	Key Performance Indicator
L&T	Larsen & Toubro
LVM3	Launch Vehicle Mark-III
NCD	Non-Communicable Disease
NHAI	National Highways Authority of India
NSIL	NewSpace India Limited
PM-JAY	Pradhan Mantri Jan Arogya Yojana
PPP	Public-Private Partnership
PSLV	Polar Satellite Launch Vehicle
ToT	Transfer of Technology
TCS	Tata Consultancy Services
USD	United States Dollar

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