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Impact of Unified Payments Interface (UPI) and Digital Payments on India's Economic Growth: Macroeconomic Channels, Financial Inclusion, and Structural Formalization

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Abstract

The rapid proliferation of digital payment architectures, anchored by the Unified Payments Interface (UPI), has triggered a structural paradigm shift in the Indian economy. Evolving over a decade from its launch in 2016 by the National Payments Corporation of India (NPCI) into the world's largest real-time retail payment mechanism, UPI now processes nearly half of the globe's real-time digital transaction volume, crossing 241 billion annual transactions with an aggregate turnover exceeding ₹314 lakh crore (~US$ 3.8 trillion) in FY 2025-26. This paper investigates the empirical and theoretical transmission channels through which UPI and retail digital payments propel India's macroeconomic expansion and structural modernization. Grounded in monetary economics (velocity of money formulation), Transaction Cost Economics, and Financial Intermediation Theory, this study analyzes how digital payment public infrastructure (DPI) accelerates gross domestic product (GDP) growth. Specifically, the paper delineates four primary macroeconomic transmission mechanisms: (1) drastic reductions in transaction friction and cash-handling logistical costs, which historically consumed 1.5% to 2% of GDP; (2) structural formalization of the informal sector and unprecedented expansion of fiscal tax buoyancy (evidenced by record GST revenues); (3) democratization of micro-credit through the digital financial footprint of micro, small, and medium enterprises (MSMEs) leveraging Credit-on-UPI and the Account Aggregator framework; and (4) friction-free public welfare distribution via Direct Benefit Transfers (DBT) under the Jan Dhan-Aadhaar-Mobile (JAM) trinity. Concurrently, the paper critically interrogates emergent systemic vulnerabilities: the zero-Merchant Discount Rate (MDR) sustainability dilemma, fintech duopolistic market concentration, escalating cyber-fraud vectors, and digital exclusion in marginalized regional cohorts. Finally, the study outlines strategic policy interventions to preserve infrastructural resilience, bolster digital literacy, integrate Central Bank Digital Currencies (CBDC e-Rupee), and expand UPI's cross-border geoeconomic footprint.

Keywords: Unified Payments Interface (UPI); Digital Payments; Economic Growth; Financial Inclusion; Transaction Velocity; MSME Credit; Economic Formalization; Digital Public Infrastructure (DPI)

1 Introduction and background

Over the past decade, India has emerged as the undisputed global frontier of digital financial architecture. Historically characterized by a pervasive reliance on physical cash, widespread unbanked populations, and a massive informal sector, the Indian financial landscape was fraught with substantial friction, high transaction costs, and structural barriers to formal capital (RBI, 2024; World Bank, 2023). However, the deliberate conception and roll-out of Digital Public Infrastructure (DPI)—popularly recognized as the 'India Stack'—has orchestrated a foundational transformation in

monetary exchange, commercial settlement, and economic governance (D'Silva et al., 2019; Nandan and Nilekani, 2023).

At the epicenter of this technological modernization is the Unified Payments Interface (UPI), developed and operated by the National Payments Corporation of India (NPCI) under the regulatory guidance of the Reserve Bank of India (RBI). Launched in April 2016 with just 21 member banks, UPI fundamentally democratized payment rails by creating an interoperable, open-protocol, mobile-first instant payment network that operates 24/7/365 at near-zero marginal cost to end consumers and micro-merchants (NPCI, 2026; PIB, 2026). What began as a domestic payments experiment has expanded into a global benchmark: as of 2025-2026, India accounts for approximately 49% of the world's real-time digital transaction volume, surpassing legacy global card networks in daily processing frequency (IMF, 2025; PIB, 2026).

1.1 The genesis: from cash preponderance to the JAM Trinity

To comprehend the magnitude of this transition, it is necessary to examine the socio-economic conditions preceding UPI. Prior to 2014, over 50% of Indian adults lacked access to a formal bank account. Physical currency was the sole medium of exchange for over 90% of retail transactions, entailing massive macroeconomic inefficiencies, including the risks of counterfeit currency, currency printing and logistics costs, tax evasion, and endemic leakage in public subsidy distribution (RBI, 2025). The transition was catalyzed by the synchronized deployment of the 'JAM Trinity':

1. **Jan Dhan Yojana:**Universal access to zero-balance, no-frills banking accounts, bringing over 530 million unbanked citizens into the formal financial ledger.
2. **Aadhaar:**A universal, biometric identity infrastructure providing 1.4 billion residents with verifiable, digital proof of identity for electronic Know-Your-Customer (e-KYC) compliance.
3. **Mobile Penetration:**The exponential expansion of high-speed 4G/5G mobile telecommunications and affordable smartphones, lowering the barrier to digital economic participation.

When UPI was superimposed upon this infrastructural bedrock, it turned the ubiquitous mobile handset into a universal point-of-sale (POS) terminal, obliterating the capital-intensive requirement for physical card-swiping hardware.

1.2 Problem statement and research scope

While the operational metrics of UPI adoption have received extensive public acclaim, rigorous empirical and theoretical analyses connecting retail digital payment adoption to macroeconomic growth variables (GDP expansion, total factor productivity, tax buoyancy, financial formalization, and credit allocation) remain fragmented in academic literature. This paper conducts a comprehensive commerce- and economics-grounded examination of the transformative impact of UPI and retail digital payments on India's economic growth. Specifically, the paper investigates: (1) the monetary and transaction-cost theoretical mechanics underpinning digital payment adoption; (2) the decade-long empirical trajectory of UPI from FY 2016-17 to FY 2025-26; (3) the core macroeconomic transmission channels driving real GDP expansion; (4) financial inclusion at the 'bottom of the economic pyramid'; (5) systemic risks and governance bottlenecks; and (6) policy pathways to safeguard sustainable digital economic expansion.

2 Theoretical and conceptual frameworks

2.1 Monetary economics: transaction costs and the velocity of money

The theoretical linkage between digital payment systems and macroeconomic performance is fundamentally anchored in monetary economics and the Quantity Theory of Money (Fisher, 1911; Friedman, 1956). The classical equation of exchange is formulated as:

$$M \times V = P \times Y \tag{1}$$

where M represents the money supply, V denotes the income velocity of money, P is the general price level, and Y represents real output or Gross Domestic Product (GDP). In a cash-dominated developing economy, the velocity of money (V) is severely constrained by spatial, temporal, and physical settlement frictions. Physical cash must be withdrawn from bank branches or automated teller machines (ATMs), transported, physically verified, stored, and manually deposited back into the banking system, resulting in substantial idle balances and settlement lag.

Digital instant payment architectures like UPI drastically increase the transaction velocity of money by enabling real-time, instantaneous settlement (T+0) without temporal friction. When liquidity moves through the economic circuit with zero settlement latency, a given stock of broad money (M3) facilitates a substantially higher volume of productive economic transactions per unit of time, directly augmenting aggregate output (Y) (Akinyemi et al., 2021; RBI, 2025). Furthermore, digital payments optimize cash management for both households and enterprises, reducing precautionary money demand and channeling surplus liquidity into productive financial assets and formal bank deposits.

2.2 Transaction cost economics (TCE) and market efficiency

According to Transaction Cost Economics (Coase, 1937; Williamson, 1981), economic exchanges incur significant search, negotiation, verification, and enforcement expenses. In traditional micro-retail markets, cash transactions generate friction costs: exact change shortages, risk of theft, counterfeit currency acceptance, and bookkeeping overhead. For formal merchants, accepting debit or credit cards traditionally required purchasing expensive POS hardware and paying high Merchant Discount Rates (MDR) ranging from 1.5% to 2.5% per transaction, pricing out micro-enterprises.

UPI dismantled these transaction barriers through a two-sided interoperable network architecture anchored by standardized, zero-cost Quick Response (QR) codes. By reducing transaction costs to negligible levels, UPI facilitated a vast surge in micro-transactions, unlocking market exchanges that were previously uneconomical. This structural efficiency aligns with Baumol-Tobin cash management principles, which demonstrate that lowering cash withdrawal and conversion costs minimizes the deadweight loss of holding physical liquidity (Baumol, 1952; Tobin, 1956).

2.3 Financial intermediation and information asymmetry reduction

A primary impediment to economic growth in emerging markets is credit rationing caused by information asymmetry between commercial lenders and borrowers (Stiglitz and Weiss, 1981). Informal entrepreneurs and micro-enterprises possess no formal audited financial statements, tax filings, or physical collateral, rendering them 'credit-invisible' to scheduled commercial banks. Consequently, MSMEs are forced into the clutches of informal, predatory moneylenders charging exorbitant interest rates.

Digital payments resolve this fundamental information asymmetry by converting invisible cash exchanges into an immutable, auditable, high-frequency digital trail. Every QR code scan and merchant payment constructs an algorithmic economic footprint. In conjunction with India's Open Credit Enablement Network (OCEN) and Account Aggregator (AA) framework, commercial banks can deploy flow-based underwriting models—assessing real-time cash flow and inventory turnover rather than relying on static land collateral—thereby unlocking institutional credit at competitive interest rates (D'Silva et al., 2019; Nandan and Nilekani, 2023).

3 The empirical trajectory: a decade of UPI transformation (2016–2026)

3.1 Exponential surge in transaction volume and value

Over the decade spanning FY 2016-17 to FY 2025-26, India's payment ecosystem experienced the most rapid retail payment digitization in global economic history. In its inaugural operational year (FY 2016-17), UPI processed a modest 1.78 crore (17.8 million) transactions valued at ₹0.07 lakh crore (₹7,000 crore). By FY 2025-26, annual UPI transaction volume surged to an unprecedented 24,162 crore (241.6 billion) transactions, representing a staggering ~13,000-fold expansion (PIB, 2026; NPCI, 2026).

In value terms, UPI annual turnover expanded from ₹0.07 lakh crore in FY 2016-17 to approximately ₹314 lakh crore (~US$ 3.8 trillion) in FY 2025-26, demonstrating an almost 4,000-fold increase. On a daily basis, the network settles over 66 crore (660 million) transactions worth approximately ₹86,000 crore, supported by over 740 live commercial, regional, and cooperative banks (PIB, 2026; Worldline, 2025).

Table 1. Decadal evolution of UPI performance metrics.

Fiscal Year	Annual Volume (Crore)	Annual Value (₹ Lakh Cr)	Live Banks	Share of Global RTP (%)
FY 2016-17	1.78	0.07	44	< 1%
FY 2018-19	535.34	8.77	142	~ 5%
FY 2020-21	2,233.07	41.04	216	~ 16%
FY 2022-23	8,375.12	139.20	399	~ 35%
FY 2024-25	18,580.40	260.50	640	~ 45%
FY 2025-26	24,161.69	314.00	741	~ 49%

3.2 Granular segmentation: person-to-person (P2P) vs. person-to-merchant (P2M)

A critical indicator of UPI's structural economic integration is the composition of its payment flows. In its early years, UPI adoption was heavily skewed toward Person-to-Person (P2P) remittances—friends splitting bills or migrant workers remitting funds home. However, between 2021 and 2026, the ecosystem underwent a definitive merchant-led inflection.

By FY 2025-26, Person-to-Merchant (P2M) transactions accounted for approximately 63% of aggregate transaction volume, while P2P comprised 37% (PIB, 2026). Over 75% of P2M transactions constitute micro-payments with a ticket size below ₹500, demonstrating that UPI has successfully penetrated everyday commercial purchases: local grocery stores (Kiranas), street vendors, tea stalls, transport aggregators, and public utilities. In value terms, P2P transactions retain a higher ticket size,

accounting for approximately 58% of aggregate transaction value due to commercial transfers, supplier payments, and family remittances.

4 Macroeconomic transmission channels to India's GDP growth

4.1 Elimination of cash handling costs and logistics deadweight

The maintenance of a physical cash infrastructure imposes substantial macroeconomic deadweight costs on developing nations. According to foundational studies by the Fletcher School and the Reserve Bank of India, printing currency, transporting physical cash via armored logistics fleets, securing bank vaults, maintaining nationwide ATM networks, sorting mutilated notes, and mitigating counterfeit bills consumed between 1.5% and 2.0% of India's annual GDP prior to the digital payments revolution (Cost of Cash India, 2014; RBI, 2023).

By shifting transactions to instant digital rails, UPI drastically curtails these institutional overheads. While Currency in Circulation (CIC) in absolute terms continues to expand moderately alongside GDP, the ratio of CIC to GDP normalized from a pandemic peak of 14.4% in 2020-21 to 11.2% by 2024-25 (RBI, 2025). The reduction in cash replenishment logistics and physical teller requirements frees substantial operational capital within commercial banking, allowing financial institutions to redirect resources into high-multiplier productive credit delivery.

4.2 Formalization of the informal economy and tax buoyancy

One of the most consequential structural impacts of digital payments is the systematic formalization of economic transactions. In a cash-dominant environment, unrecorded cash transactions facilitate widespread tax non-compliance, under-reporting of sales, and parallel 'black money' circuits. Digital payments inherently generate a transparent, verifiable audit trail, integrating unorganized retailers into formal accounting systems (Eichengreen and Gupta, 2023; Mukherjee, 2024).

This transparency has triggered immense fiscal tax buoyancy. As micro-retailers adopt UPI QR codes, their supplier purchases and retail receipts become visible within formal value chains, encouraging registration under the Goods and Services Tax (GST) framework. Consequently, monthly gross GST collections expanded from an average of ₹95,000 crore in 2018-19 to consistently surpassing ₹1.80 to ₹2.10 lakh crore monthly by 2025-2026 (Ministry of Finance, 2026). This expanded tax base provides the sovereign government with robust fiscal resources to finance capital expenditures in national highways, railways, renewable energy, and social safety nets without widening fiscal deficits.

4.3 Democratization of MSME credit: the shift to flow-based underwriting

Micro, Small, and Medium Enterprises (MSMEs) contribute approximately 30% of India's GDP and over 45% of total manufacturing exports, yet have historically faced an institutional credit gap exceeding ₹25 lakh crore (US$ 300 billion) (IFC, 2022). Commercial banks refused to lend to micro-merchants due to lack of verifiable credit history and immovable asset collateral.

UPI and digital payments have unlocked flow-based cash underwriting. By analyzing daily UPI receipt velocity, transaction consistency, seasonal revenue spikes, and customer return rates, digital lenders and fintech underwriting platforms can compute dynamic creditworthiness scores. Through recent architectural additions such as 'Credit Line on UPI' and the integration of RuPay credit cards on UPI rails—which generate over ₹10,000 crore in monthly credit transactions—micro-merchants can access pre-approved revolving working capital within seconds (NPCI, 2026). This rapid liquidity

injection fuels inventory replenishment, prevents business closures, and accelerates micro-enterprise revenue growth.

Table 2. Macroeconomic transmission channels linking digital payments to Indian economic growth.

Transmission Channel	Operational Mechanism	Economic Multiplier / Indicator	Impact on Macroeconomic Growth
Transaction Friction Reduction	Zero-cost instant QR settlement (T+0) replacing manual cash and POS fees.	Savings of 1.2% to 1.7% of GDP in cash printing, transit, and security overhead.	Frees commercial bank capital for productive industrial credit allocation.
Tax Buoyancy & Fiscal Space	Immutable digital receipts integrating informal transactions into GST ledger.	Gross GST revenues exceeding ₹1.8–2.1 lakh crore/month; income tax base expansion.	Enables sovereign capital expenditure build-out without fiscal deficit deterioration.
MSME Working Capital	Flow-based lending via UPI transactional trail, Account Aggregators, and OCEN.	Credit Line on UPI processing ₹10,000+ Cr/ month; compression of loan turnaround.	Directly enhances MSME operational capacity, payrolls, and manufacturing output.
Social Welfare Efficiency (DBT)	Targeted welfare disbursement bypassing administrative middlemen via AePS/UPI.	Cumulative DBT transfers exceeding ₹38 lakh crore; elimination of leakages.	Boosts bottom-of-the-pyramid marginal propensity to consume (MPC) and aggregate demand.

4.4 Direct Benefit Transfers (DBT) and welfare distribution efficiency

In developing welfare regimes, administrative leakages and 'ghost beneficiaries' historically siphoned off substantial public transfer outlays. The integration of digital payment infrastructure with Aadhaar and Jan Dhan bank accounts enabled the Direct Benefit Transfer (DBT) architecture. Through DBT, central and state welfare subsidies—including PM-KISAN agricultural support, rural employment wages (MGNREGS), LPG cooking gas subsidies (PAHAL), and student scholarships—are deposited directly into recipients' bank accounts electronically.

By 2026, cumulative welfare disbursements disbursed via DBT crossed ₹38 lakh crore (over US$ 460 billion), with estimated administrative savings from deduplication and fraud elimination surpassing ₹3.5 lakh crore (~US$ 42 billion) (DBT Bharat, 2026). These efficiency dividends directly enhance the marginal propensity to consume (MPC) among lower-income rural households, injecting robust purchasing power into local goods and services markets.

5 Financial inclusion and 'Bottom of the Pyramid' empowerment

5.1 Street vendors, micro-entrepreneurs, and PM-SVANidhi

The societal impact of UPI is most vividly illustrated in the economic elevation of India's urban and rural street vendors. Under the PM Street Vendor's AtmaNirbhar Nidhi (PM-SVANidhi) scheme, millions of vegetable vendors, fruit sellers, and small artisans were integrated into digital commerce. Equipped with QR soundboxes—audio devices that instantly announce transaction receipts in local regional dialects—unlettered merchants gained complete confidence in accepting digital payments without fear of being defrauded.

Empirical studies reveal that street vendors actively utilizing UPI experienced a 20% to 30% increase in weekly turnover, driven by the elimination of exact change friction and the ability to serve digital-native consumers who no longer carry paper currency (Dubey and Purnanandam, 2023; ResearchGate, 2024). Furthermore, disciplined repayment of micro-loans through UPI digital footprints automatically unlocks higher tranches of formal credit, transitioning marginalized operators from the informal economy into the institutional banking fold.

5.2 Gender inclusivity and household financial autonomy

Digital financial inclusion has exerted a profound transformative impact on female economic agency in India. Under traditional patriarchal cash dynamics, rural and peri-urban women often lacked financial privacy, with household cash reserves pooled or appropriated by male family members. The combination of individual Jan Dhan bank accounts, mobile phones, and UPI interfaces gives women independent, private custodial control over their personal earnings, self-help group (SHG) micro-enterprises, and government welfare transfers (Bachas et al., 2018; Cantu et al., 2024).

Research indicates that independent female financial control leads to higher household expenditures on child education, nutrition, healthcare, and household sanitary infrastructure, generating positive intergenerational human capital externalities that enhance long-term economic productivity (World Bank, 2023).

6 Structural challenges, bottlenecks, and systemic vulnerabilities

Notwithstanding the monumental success of India's digital payment ecosystem, its unprecedented scale introduces critical economic distortions, market vulnerabilities, and operational risks that warrant urgent regulatory scrutiny.

6.1 The zero-MDR dilemma and commercial sustainability

The extraordinary adoption of UPI was heavily accelerated by the sovereign government's mandate in January 2020 enforcing a zero-Merchant Discount Rate (zero-MDR) policy on all retail UPI and RuPay debit card transactions. While this eliminated onboarding friction for tens of millions of small merchants, it fundamentally disrupted the commercial revenue model for acquiring banks, payment service providers (PSPs), and fintech infrastructure developers (RBI, 2024; Sanyal, 2024).

Maintaining high-throughput, fault-tolerant banking servers, anti-fraud algorithms, and real-time network switches requires continuous capital expenditure. To compensate for lost transaction revenues, the central government has provided annual budgetary subsidies (ranging from ₹1,500 crore to ₹2,600 crore). However, industry leaders argue this fiscal subsidy covers only a fraction of aggregate processing costs. If an equitable cost-sharing or tiered MDR framework (exempting micro-merchants while charging high-turnover enterprise merchants) is not institutionalized, private investment in backend banking infrastructure resilience risks stagnation.

6.2 Fintech duopoly and market concentration risk

A major structural risk within India's retail payments architecture is extreme market concentration at the Third-Party Application Provider (TPAP) consumer layer. Two foreign-backed digital platforms—PhonePe (backed by Walmart) and Google Pay—collectively command over 80% to 85% of total UPI monthly transaction volumes (NPCI, 2026; CCI, 2024). Legacy commercial banks (such as State Bank

of India, HDFC Bank, ICICI Bank) and alternative fintech applications account for the remaining minority share.

This concentration creates severe systemic vulnerabilities: an operational outage, cyber-attack, or server malfunction within either dominant application could paralyze retail economic transactions across the entire republic. Despite NPCI's policy directive proposing a 30% volume market cap on individual TPAP applications, implementation deadlines have been repeatedly postponed due to the logistical challenge of capping market share without abruptly declining consumer transaction requests.

6.3 Escalating cybersecurity threats, digital fraud, and mule accounts

As millions of financially and technologically vulnerable citizens enter the digital payment fold, cyber-fraud has evolved into an acute societal menace. Financial criminals increasingly exploit cognitive vulnerabilities through social engineering, phishing, fake payment links, fraudulent QR codes, and malicious remote-screen-sharing applications rather than hacking underlying cryptography (I4C, 2025; Christensen et al., 2024).

Furthermore, organized syndicates deploy networks of 'mule bank accounts'—often opened in the names of impoverished rural citizens under the pretext of job schemes—to rapidly layer and siphon illicit proceeds across hundreds of rapid UPI hops within seconds, evading traditional law enforcement freezing mechanisms. Preserving public trust requires advanced AI-driven behavioral biometric monitoring, automated cross-bank mule account freezes, and aggressive grassroots consumer awareness campaigns.

6.4 The digital divide and infrastructure chokepoints

While smartphone penetration has grown rapidly, significant digital disparities persist across geographic and socio-demographic divides. Over 300 million citizens in remote rural hamlets still rely on 2G feature phones, where internet connectivity is intermittent and digital literacy is minimal (NSO, 2025). Although NPCI developed offline and feature-phone payment innovations—such as UPI 123Pay (interactive voice response and missed-call payments) and UPI Lite (on-device wallet for sub-₹500 transactions)—their adoption remains modest compared to smartphone-based visual QR interfaces. Unequal access risks exacerbating economic stratification between digitally empowered urban cohorts and digitally disenfranchised rural agrarian populations.

7 Strategic policy roadmap and global horizons

To sustain the transformative economic dividends of UPI while mitigating systemic fragilities, policymakers and financial regulators must execute a comprehensive strategic roadmap across domestic and international frontiers.

1. **Implementation of a Tiered, Non-Distortive Cost-Sharing Mechanism:**Transition from blanket zero-MDR to a rationalized, tiered pricing framework. Micro-merchants (annual turnover < ₹20 lakh) must remain fully exempt from fees to protect grassroots financial inclusion, while enterprise corporate merchants (e.g., hypermarkets, e-commerce giants, airlines) should absorb a modest, capped interchange fee (0.25% to 0.30%) to sustain backend core banking server upgrades.
2. **Enforcement of Market Concentration Safeguards:**Encourage the growth of domestic bank-owned UPI applications and open-network alternatives like the Open Network for Digital Commerce

(ONDC). Gradually enforcing market-share thresholds will foster healthy competitive dynamics and eliminate single-point-of-failure vulnerabilities.

3. **Synergistic Harmonization of UPI and Central Bank Digital Currency (CBDC):**The Reserve Bank of India's retail e-Rupee (CBDC-R) should not be positioned as a rival to UPI, but as an underlying sovereign settlement layer. By making CBDC interoperable with UPI QR codes, consumers can execute sovereign-backed digital cash transactions, reducing commercial bank liquidity strain during peak holiday shopping surges.

4. **Global Interoperability and Project Nexus Integration:**India must accelerate the internationalization of UPI. Following bilateral linkages with Singapore's PayNow, UAE's Jaywan, and European gateways, India's active participation in the Bank for International Settlements' (BIS) Project Nexus will enable instant, low-cost cross-border multilateral remittances across Southeast Asia and beyond, drastically reducing the traditional 5% to 7% remittance taxation imposed by legacy wire corridors.

5. **Institutionalizing Algorithmic Fraud Intelligence:**Mandate the real-time integration of all commercial banks with the Citizen Financial Cyber Fraud Reporting and Management System (CFCFRMS), deploying graph neural networks to detect and freeze mule accounts in real-time before illicit funds can be liquidated.

8 Conclusion

The Unified Payments Interface and the broader digital payments revolution represent a watershed milestone in India's macroeconomic development. By architecting an open, interoperable, low-cost public digital rail, India has fundamentally restructured the mechanics of economic exchange. The transition has eliminated billions of dollars in cash-handling inefficiencies, expanded the sovereign fiscal tax net through formalization, unblocked vital working capital credit for millions of historically excluded MSMEs, and catalyzed frictionless welfare distribution to the vulnerable.

As UPI completes a decade of operational excellence and moves toward its next phase of maturity—integrating conversational voice AI, credit lines, offline transactions, and cross-border connectivity—it stands as an international model of how Digital Public Infrastructure can drive inclusive, sustainable economic growth. Addressing commercial revenue sustainability, combating cyber-fraud, and bridging regional digital divides will ensure that the fruits of this digital revolution continue to propel India's ascent toward a modernized, high-income economy ('Viksit Bharat').

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