

BLOCKCHAIN INDIA CHALLENGE 2026

SAMĀDHĀNA

Blockchain-Based Public Procurement Payment System

for MSMEs using NBF Lite and Digital Rupee



MeitY Initiative



Digital Rupee CBDC



NBF Lite

The MSME Payment Crisis

60-90 days

Payment delays beyond statutory 45-day limit

- ⚠ Reactive Monitoring**
Complaint-based system with no real-time visibility
- 🔗 No Unified Digital Trail**
Disconnected systems across procurement lifecycle
- 📉 Severe Working Capital Stress**
Critical bottleneck for MSME financial health



MSMEs struggle with cash flow due to payment delays

India's MSME Sector - A Critical Economic Pillar



Backbone of India's Economy

Critical for inclusive growth

 GDP Contribution

30.1%

of Gross Value Added

 Export Share

45.73%

of total exports

 Registered MSMEs

7.16 Cr

enterprises nationwide

 Employment

31.33 Cr

people employed

Samādhāna: Automated Compliance System



Digital Documentation

Digitizes procurement documents—
Purchase Orders, Invoices, Goods Receipt
Notes—on a tamper-proof blockchain
ledger



Smart Contract Automation

Automates payment triggers via smart
contracts upon verified acceptance of
goods or services



Instant CBDC Settlement

Executes instant settlement using
programmable Digital Rupee (e-₹) Central
Bank Digital Currency



Immutable Audit Trail

Creates permanent, tamper-proof audit trail
for compliance monitoring and working
capital financing

How It Works

01

Purchase Order Creation

Digital PO recorded on blockchain with hash verification



02

Invoice Submission

MSME submits invoice referencing PO on ledger



03

Goods Verification

Officer verifies and signs digital goods receipt



04

Smart Contract Validation

Chaincode validates invoice, receipt, and payment status



05

Payment Trigger

Smart contract initiates CBDC payment instruction



06

CBDC Settlement

Treasury e-₹-W transfers to MSME e-₹-R wallet



07

Audit Trail Complete

Payment hash recorded, immutable audit trail created



Technical Architecture



Smart Contract Workflow



Government Portal

E-Procurement System Integration



NBF Lite

Hyperledger Fabric Blockchain



Treasury & Finance

Payment Authorization Layer



Digital Rupee

CBDC Settlement Engine



MSME Supplier Interface

Mobile App for Invoice Submission & Payment Tracking

✔️ Permissioned Network

✔️ Immutable Ledger

✔️ Smart Contracts

✔️ Real-time Monitoring

Key Benefits



For MSMEs



Faster Payments

Within 45-day statutory limit



Reduced Costs

Lower financing expenses



Transparent Status

Real-time payment tracking



Working Capital

Better cash flow access



For Government



Automated Compliance

MSMED Act enforcement



Real-time Monitoring

Centralized dashboard



Complete Audit Trail

Tamper-proof records



Reduced Grievances

Proactive resolution



For Economy



MSME Health

Stronger sector growth



Better Cash Flow

Improved circulation



Economic Growth

Accelerated development



\$5 Trillion Goal

National vision support

Implementation Roadmap

01 Proof of Concept

3-6 months

Deploy NBF Lite Network

Single-node Hyperledger Fabric

Develop Smart Contracts

Core procurement workflow

Build Web Interfaces

Government & MSME portals

Test Procurement Scenarios

Simulated CBDC payment flow

 Technical Feasibility Demonstrated

02 Pilot Deployment

6-12 months

Partner with State Govt

Willing department selection

Integrate E-Procurement

Connect existing systems

Onboard 20-30 MSMEs

Training & support

Process Real Transactions

Live procurement payments

 Operational Validation Complete

03 Scaled Deployment

12-24 months

Nationwide Rollout

Central & state departments

Live CBDC Integration

Production Digital Rupee

TReDS Connectivity

Trade finance ecosystem

24/7 Support Infrastructure

Comprehensive training programs

 Full-Scale Operational System

Built on India's Indigenous Infrastructure



NBF Lite

MeitY's national blockchain framework for secure deployment

Digital Rupee

RBI's CBDC for instant, programmable payment settlement

MSMED Act Compliance

Automated enforcement of 45-day payment mandate

Digital India Vision

Aligned with national digital transformation initiative

Blockchain India Challenge

Meets all criteria for digital governance solutions

Data Sovereignty

Indigenous technology with complete data localization



Join Us in Transforming Public Procurement

Together, we can ensure timely payments to **7.16 crore MSMEs**, strengthen India's economic backbone, and build a transparent procurement ecosystem.



Support Pilot Development

Fund and guide initial
implementation



Partner for Implementation

Collaborate on state-level rollout



Digital India Vision

Contribute to national
transformation