

PPB

Crash course

Module- C

Lec-02

~~Logical Access Control Framework~~

To safeguard assets and maintain data integrity, comprehensive access controls must be implemented. The Chief Information Security Officer ensures available security features are properly deployed.

01

Minimum Access Principle

Users receive only the minimum access level needed for their job functions

02

Restricted Application Access

Access limited to specific applications, menus, files, and servers

03

Maintenance Controls

File maintenance restricted to minimum personnel with proper approval

04

Security Monitoring

Regular access level reviews and violation detection methods



Operational Security Controls

Key security aspects ensure authorized, accurate, and complete data processing while preventing unauthorized system access and program amendments.

Data Integrity Controls

- System restart without record distortion
- Prevention of unauthorized program changes
- Access controls matching staff responsibilities
- ✓ Segregation of duties and user monitoring

System Security Measures

- Parameter change authentication
- Manual charge authorization
- Complete module implementation
- Regular exceptional report verification

Backup and Recovery Protocols

✓

Banks must maintain comprehensive backup procedures with proper documentation and secure storage. Daily and monthly backups require specific protocols and custody arrangements.

Daily Backup Requirements

Six sets for weekdays, properly labeled and indexed under joint custody

Monthly Backup Sets

Twelve sets for each month with maintained backup register

Secure Storage

Fireproof cabinets with lock and key, off-site emergency preservation

Cybersecurity and System Protection

Banks must implement comprehensive security measures to protect against cyber-attacks and electronic payment system misuse, following RBI guidelines on information security and technology risk management.

Anti-Virus Protection

Latest version software installed on all servers and PCs, regularly updated for new threats

Security Patches

Timely application of vendor-released security updates and patches

Physical Access Control

Restricted computer room access to authorized personnel only

Comprehensive Bank Responsibilities

Banks must establish robust frameworks addressing increasing cyber-attacks and electronic payment system misuse. RBI guidelines mandate specific policies and procedures for comprehensive risk management.

1 Policy Framework

IT Policy, data processing interfaces, integrity, and security protocols

3 Control Documentation

E-banking products, MIS reports, and exceptional report generation

2 Business Continuity

Disaster recovery plans and accounting manual procedures

4 Audit Compliance

System audits, internal reviews, and customer complaint resolution

System Audit Requirements

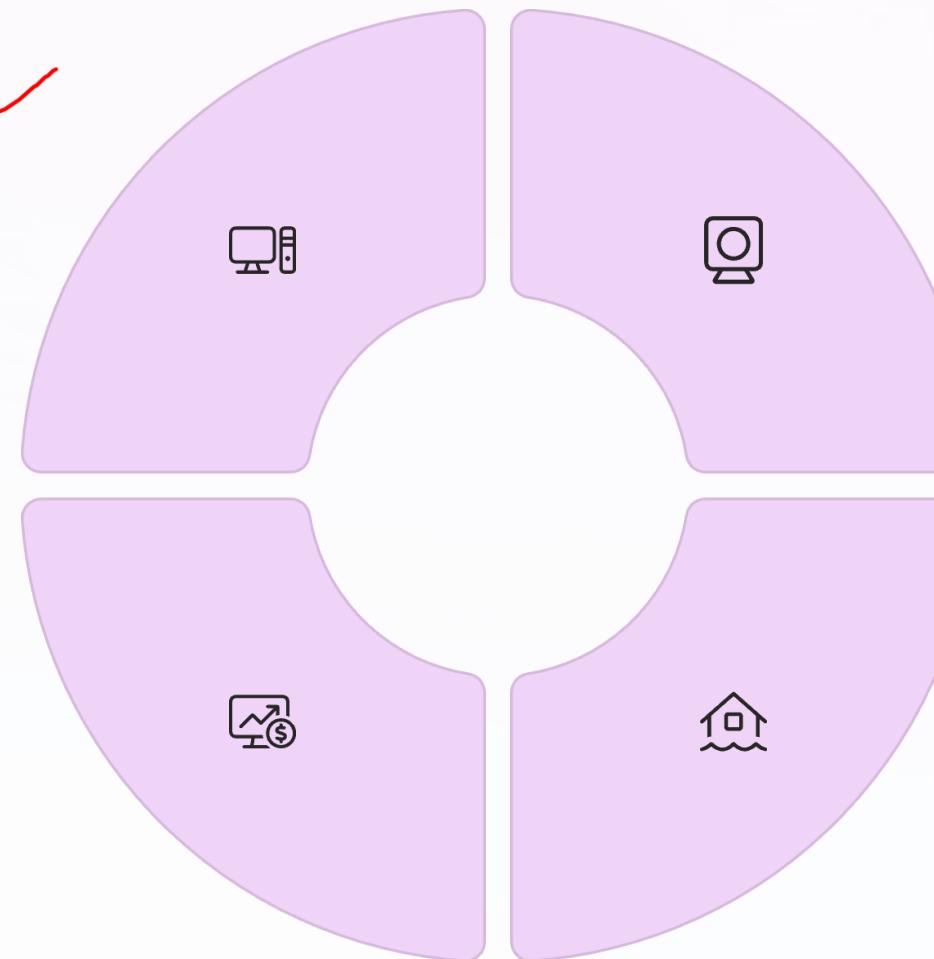
Banks must conduct system audits by chartered accountant firms to ensure safe, secure, sound, and efficient payment system operations according to RBI-authorized process flows.

Hardware Structure

Evaluation of physical infrastructure and operating systems

Personnel Training

Staff competency in system and application management



Security Controls

Access controls on key applications and security measures

Recovery Plans

Disaster recovery capabilities and business continuity

Alternate delivery channel

The Payment Revolution

CB2

Traditional Era

Cash, coins, and paper ~~checks~~ dominated transactions before banking innovation transformed the industry.

Technology advancement has revolutionized payment methods over the past decade, creating unprecedented convenience and efficiency in banking operations.

Digital Transformation

Electronic devices, ATMs, and mobile banking now enable anytime, anywhere financial services for customers.

Alternate Delivery Channels

Core banking technology enables banks to handle massive transaction volumes impossible with traditional branch banking.



ATMs

24/7 cash access and banking services at convenient locations worldwide.



Online Banking

Web-based platforms for comprehensive account management and transactions.



Mobile Banking

Complete banking services through smartphones and mobile applications.



E-Wallets

Digital payment solutions for quick, secure money transfers and purchases.



19

ATM Revolution in Banking

Automated Teller Machine technology emerged from Dr. C. Rangarajan's committee recommendations in early 1990s India. These machines strategically positioned at airports, hospitals, and commercial centers transformed banking accessibility.

Each customer receives an ATM card with a Personal Identification Number (PIN) for secure transactions, enabling unprecedented banking convenience.

u debit

ATM Benefits

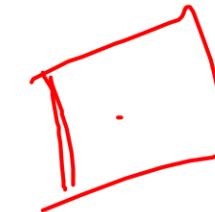
Customer Advantages

- 24/7 access availability
- Reduced wait times
- Transaction privacy
- Any branch banking
- International card acceptance
- Multiple services beyond cash

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Bank Benefits ✓

- Lower setup costs than branches
- Staff freed for productive work
- Cross-selling opportunities
- Product display capabilities
- Reduced cash handling



ATM Operating Models

Online ATMs

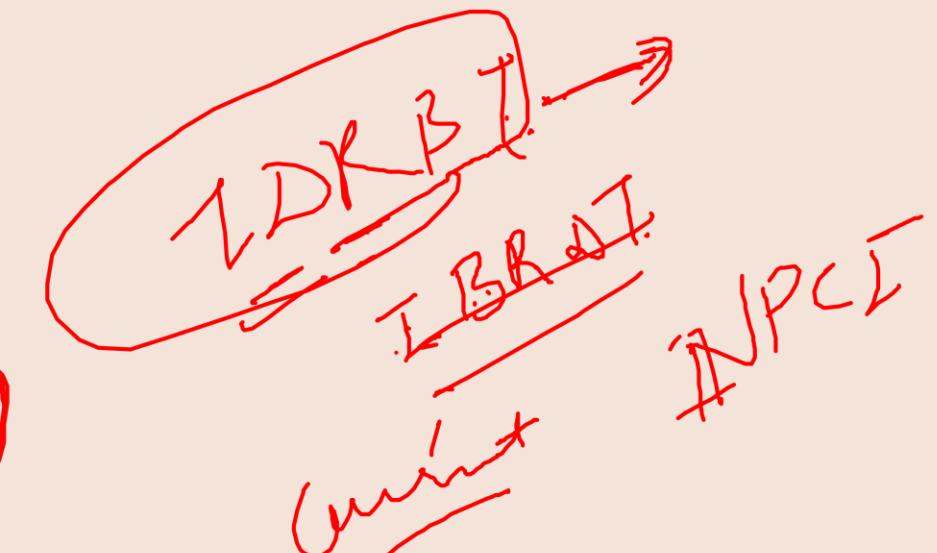
Connected to bank databases with real-time account access and daily withdrawal limits monitored by ATM switches.

Offline ATMs

Operate independently without database connection, allowing withdrawals up to pre-fixed limits regardless of account balance.

Networked ATMs

Connected through networks like National Financial Switch (NFS), enabling cardholders to use any networked ATM for true "anywhere banking."





ATM Network Evolution

Indian Banks' Association launched SWADHAN network in Mumbai on February 1, 1997, providing the first 24/7 electronic banking services.

IDRBT established National Financial Switch (NFS) for national-level connectivity. NPCI took over NFS operations in December 2009, creating seamless interoperability across all Indian banks and transforming customers from branch-specific to bank-wide access.

Comprehensive ATM Services

- Core Services

Cash withdrawal, balance inquiry, statement review, PIN changes

- Deposit Functions

Cash deposits, check deposits, funds transfers between accounts

- Payment Services

Credit card payments, utility bills, insurance premiums

- Account Management

Checkbook requests, term deposit opening, profile updates

- Digital Services

Mobile recharge, DTH top-ups, Aadhaar updates



White Label ATMs (WLA)

Non-bank entities own and operate White Label ATMs under RBI's Payment & Settlement Systems Act, 2007. Four authorized operators currently manage WLAs: Indial Payments, Tata Communications Payment Solutions, Hitachi Payment Services, and Vakrangee.

These ATMs display no bank branding and serve all banks' customers, expanding financial inclusion in Tier 1-6 cities and rural areas.

WLA Operating Framework

Location Freedom

WLA operators choose locations while meeting RBI's annual targets and tier-city distribution ratios.

Transaction Charges

Five free monthly transactions don't apply to WLAs. All charges must be displayed before transaction initiation.

Revenue Structure

Operators earn through interchange fees and additional revenue from advertisements and value-added services.

Regulatory Compliance

Same operational guidelines as bank-operated ATMs, including compensation for failed transactions.

Brown Label vs White Label ATMs

Brown Label ATMs

Service providers own hardware and lease ATMs to banks.
The sponsor bank handles cash management and network connectivity while displaying their brand.

- Bank branding displayed
- Bank manages cash and connectivity
- Service provider maintains hardware

White Label ATMs

Non-bank operators own and manage everything independently, serving all banks' customers without displaying any specific bank brand.

- No bank branding
- Operator manages all aspects
- Serves all bank customers

(CDM has 50% daily withdrawal per card)

BNIA bulk not accepted

200 notes mixed

200 notes mixed

*Sort * White deposit*

Cash Recyclers: Advanced ATM Technology

Cash Recycler machines accept customer deposits and dispense the same cash, immediately crediting accounts in real-time with transaction receipts.



Dual Function

Both accepts and dispenses cash efficiently



Currency Validation

Ensures genuineness and identifies counterfeits



Cardless Transactions

Up to ₹20,000 daily without debit card



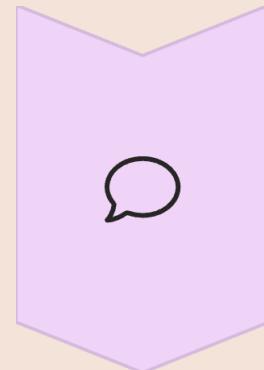
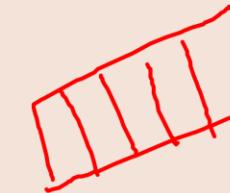
Kiosk Banking Revolution

Electronic kiosks in high-traffic areas like airports and malls provide unmanned banking services with artificial intelligence capabilities.

These self-service terminals offer primary banking services at strategic locations, especially benefiting remote areas lacking nearby bank branches. Multi-functional kiosks leverage technology for hassle-free, customer-friendly banking while marketing bank products effectively.



Specialized Banking Machines



Passbook Printing Kiosks

Automated 24/7 passbook updating using magnetic strips, with auto-flip and alignment capabilities for customer convenience.

PBK



Cash Deposit Machines

Self-service terminals for instant money deposits using debit cards, eliminating queues and deposit slip requirements.

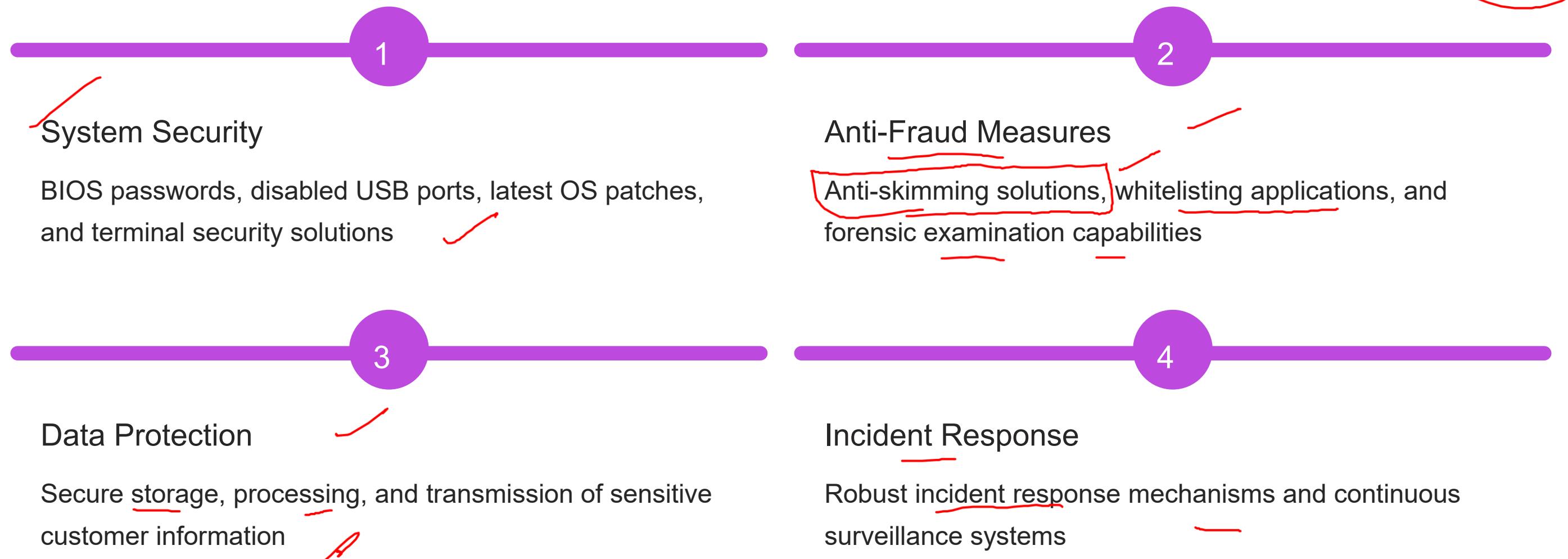


Bulk Note Acceptors

Round-the-clock bulk deposit processing with sorting, counting, and instant crediting up to 200 mixed notes.

ATM Security Framework

RBI mandated comprehensive cybersecurity controls for ATM operations and third-party service providers effective December 31, 2019.



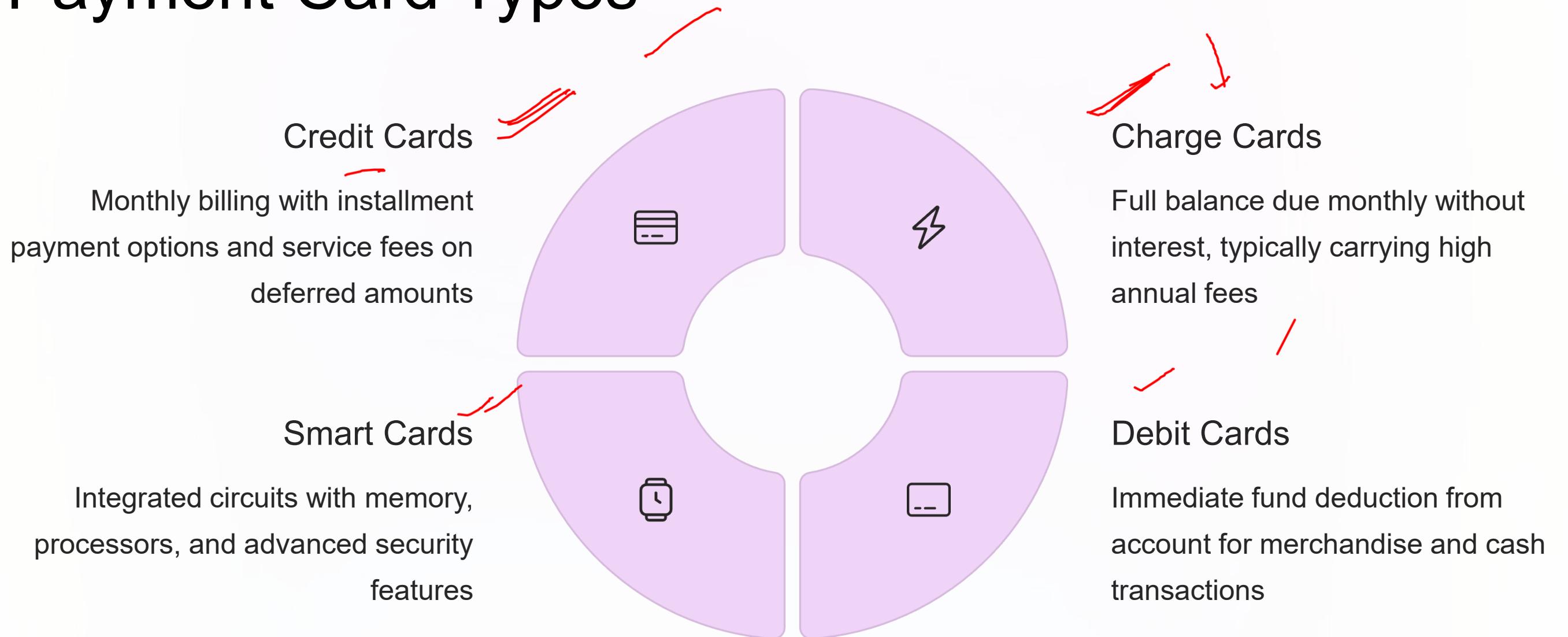


PIN Security and Green PIN

Personal Identification Numbers secure ATM and POS transactions through numerical digit combinations. Traditional PINs came sealed on paper, requiring separate storage from cards.

Green PIN initiative enables instant PIN generation through ATM, Internet Banking, IVR, and SMS using One Time Passwords. This paperless approach reduces carbon footprint, eliminates physical custody requirements, and provides immediate convenience.

Payment Card Types

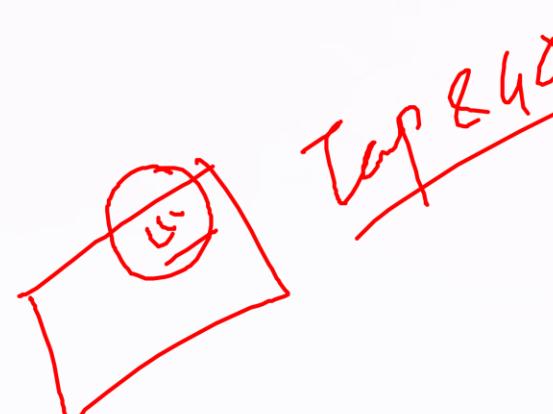


EMV and Contactless Technology

Europay, MasterCard, and Visa (EMV) standards ensure global chip card interoperability with embedded microchips providing enhanced security.

EMV Advantages

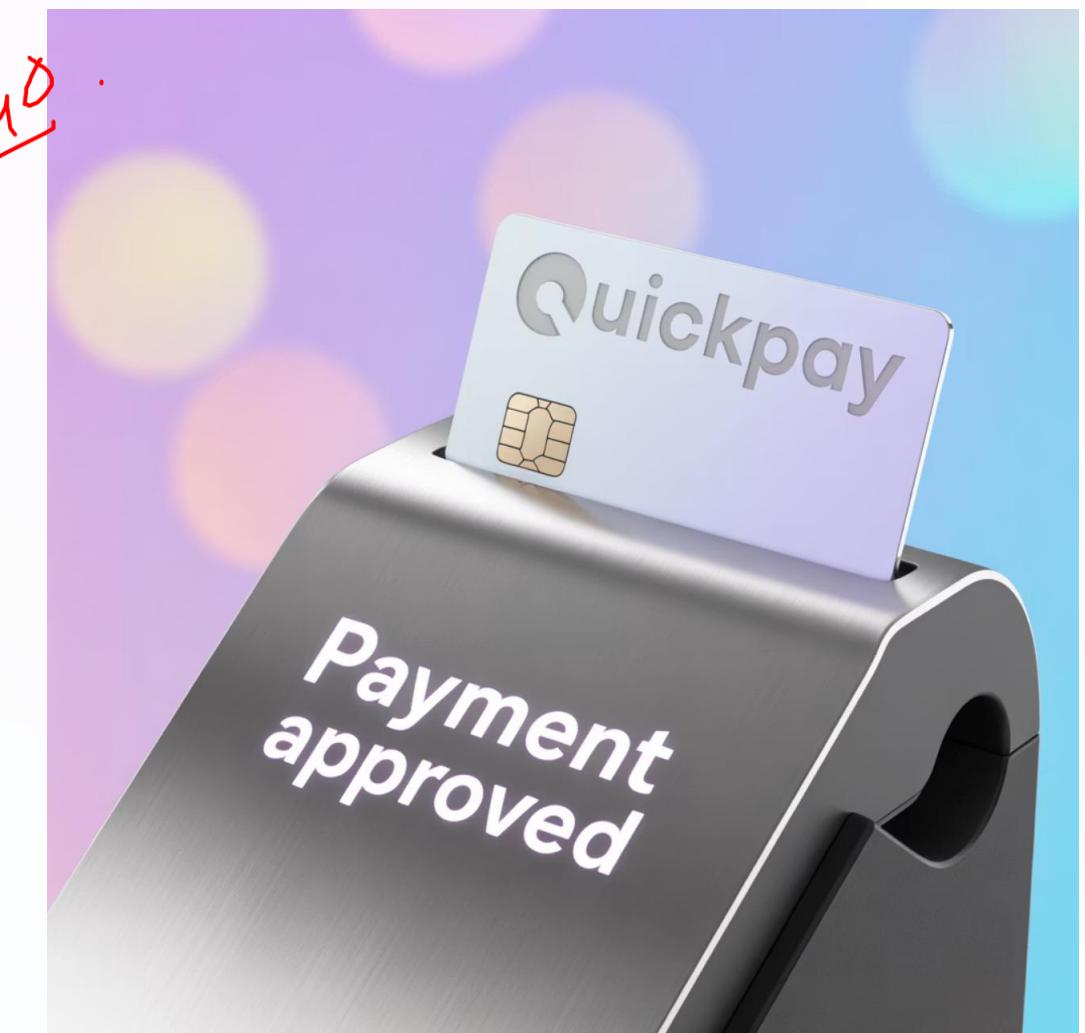
- Prevents card counterfeiting
- PIN authentication prevents misuse
- Secure transaction messaging
- Compliance with ISO standards



NFC Contactless Cards

Near Field Communication enables "tap and go" payments within 10cm range, offering faster, more secure transactions without physical card handling.

2005!



Mobile Wallets and Digital Payments

Mobile wallets like PayTM, MobiKwik, and PhonePe represent digital versions of physical wallets, storing payment information securely for online and offline transactions.

10cm

NFC Range

Communication distance for contactless payments

24/7

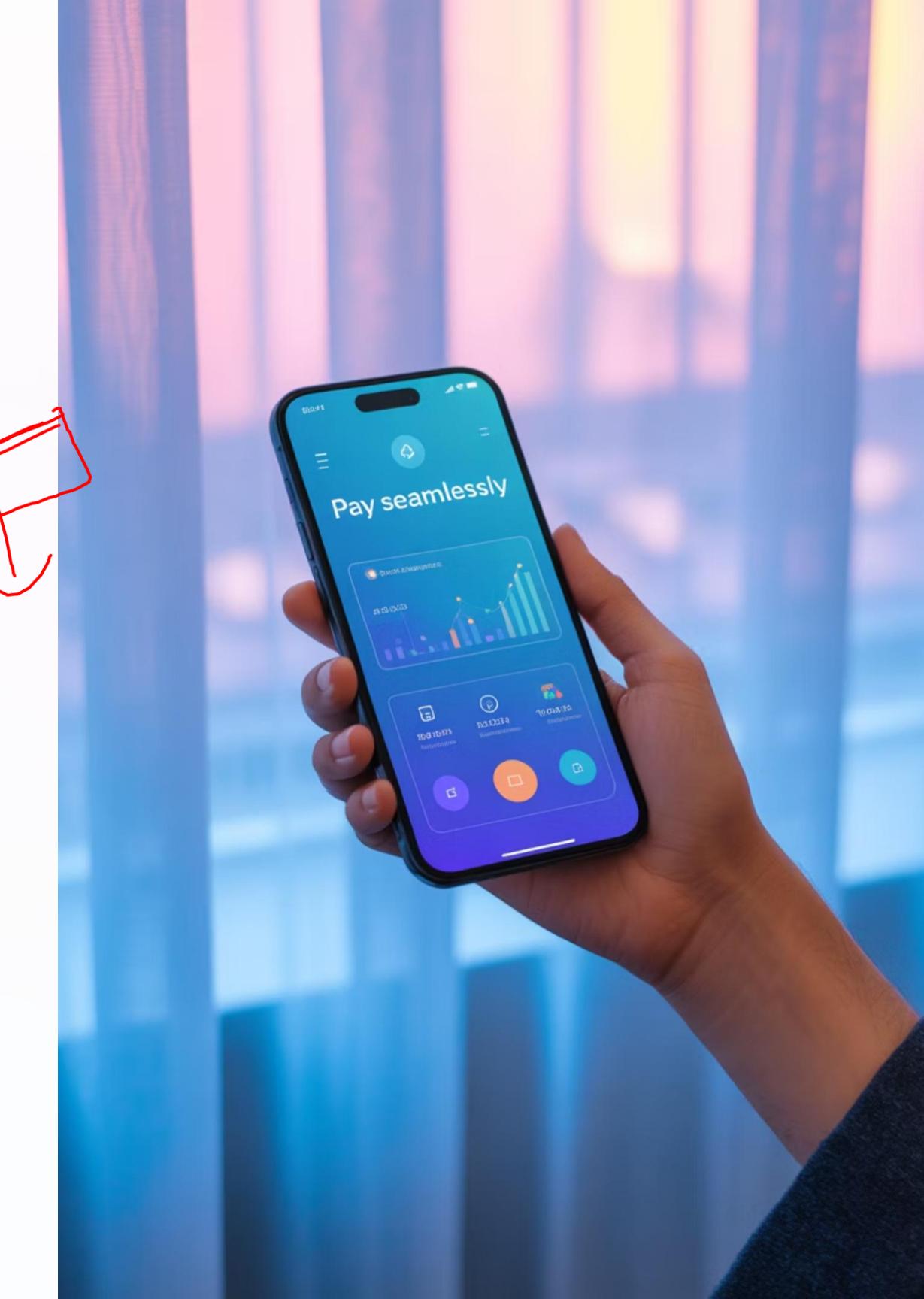
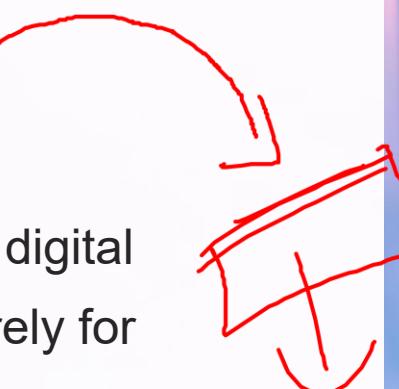
Availability

Round-the-clock digital payment access

1-tap

Payment Speed

Quick transaction processing time



Future of Banking Technology

Banking continues evolving toward complete digital integration with artificial intelligence, biometric security, and seamless customer experiences.



Mobile-First Banking

Smartphones becoming primary banking interfaces with comprehensive service capabilities



Advanced Security

Biometric authentication including fingerprints, voice recognition, and retinal scanning



AI Integration ✓

Intelligent systems providing personalized services and fraud detection capabilities

The convergence of these technologies creates unprecedented opportunities for financial inclusion and customer convenience in the digital economy.

Prepaid Payment Instruments (PPIs)

✓
Prepaid



Understanding PPI Categories

Closed System PPIs

Entity-specific instruments for internal goods and services only.
No RBI authorization required.

Small PPIs

Minimum-detail instruments with ₹10,000 outstanding limit. Two variants available.

Full-KYC PPIs

Complete KYC-compliant instruments with ₹2,00,000 outstanding limit and transfer capabilities.

2000

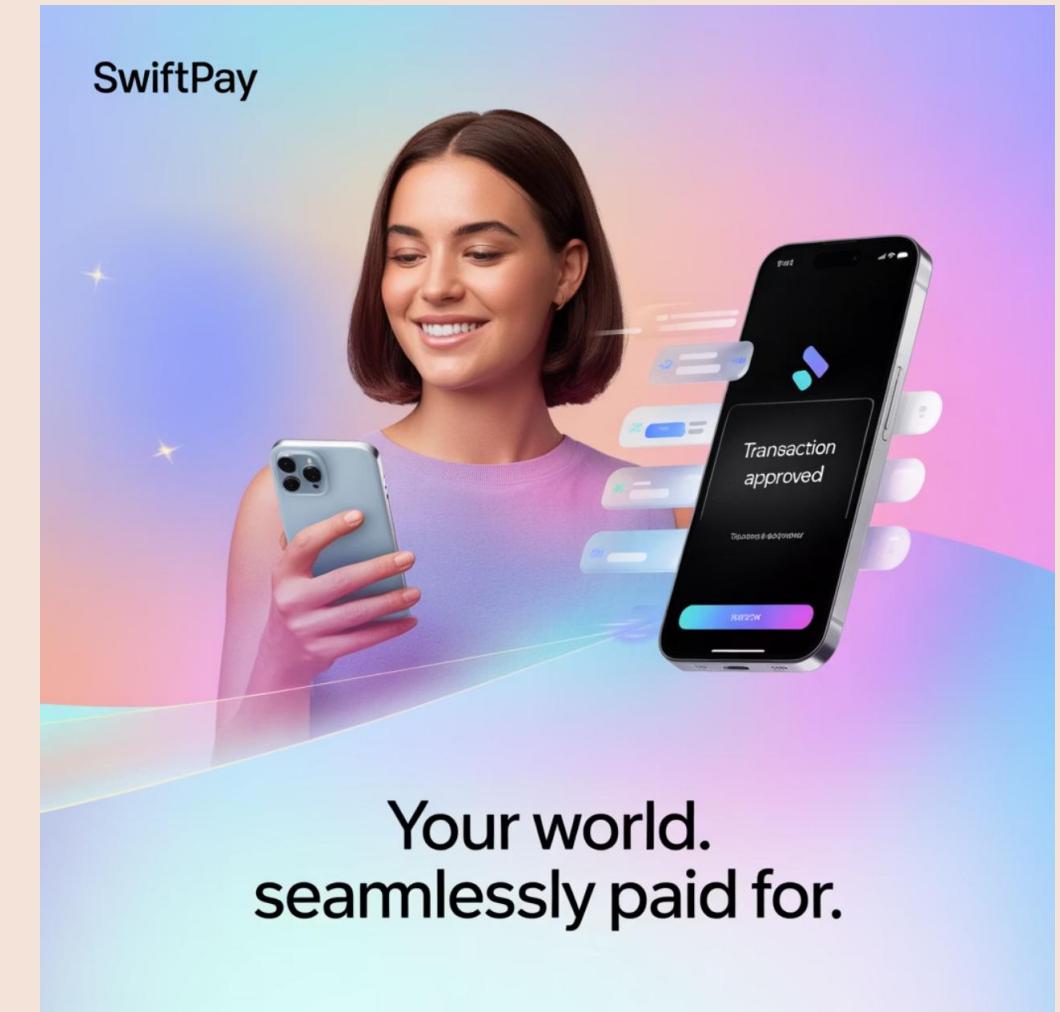
Small PPIs with Cash Loading Facility

Key Requirements

- Mobile number verification with OTP ✓
- Self-declaration of identity documents
- Maximum ₹10,000 monthly loading
- ₹1,20,000 annual loading limit
- Conversion to full-KYC within 24 months

Usage Restrictions

Purchase of goods and services only. No cash withdrawal or funds transfer permitted.





Small PPIs Without Cash Loading

Loading Sources

Funds must originate from bank accounts, credit cards, or full-KYC PPIs only.

Same Limits Apply

₹10,000 monthly and ₹1,20,000 annual loading limits maintained.

Closure Flexibility

Holders can close accounts anytime with balance transfer options.

Full-KYC PPI Features



Complete KYC Compliance

Video-based Customer Identification Process (V-CIP) permitted for account opening and conversion.



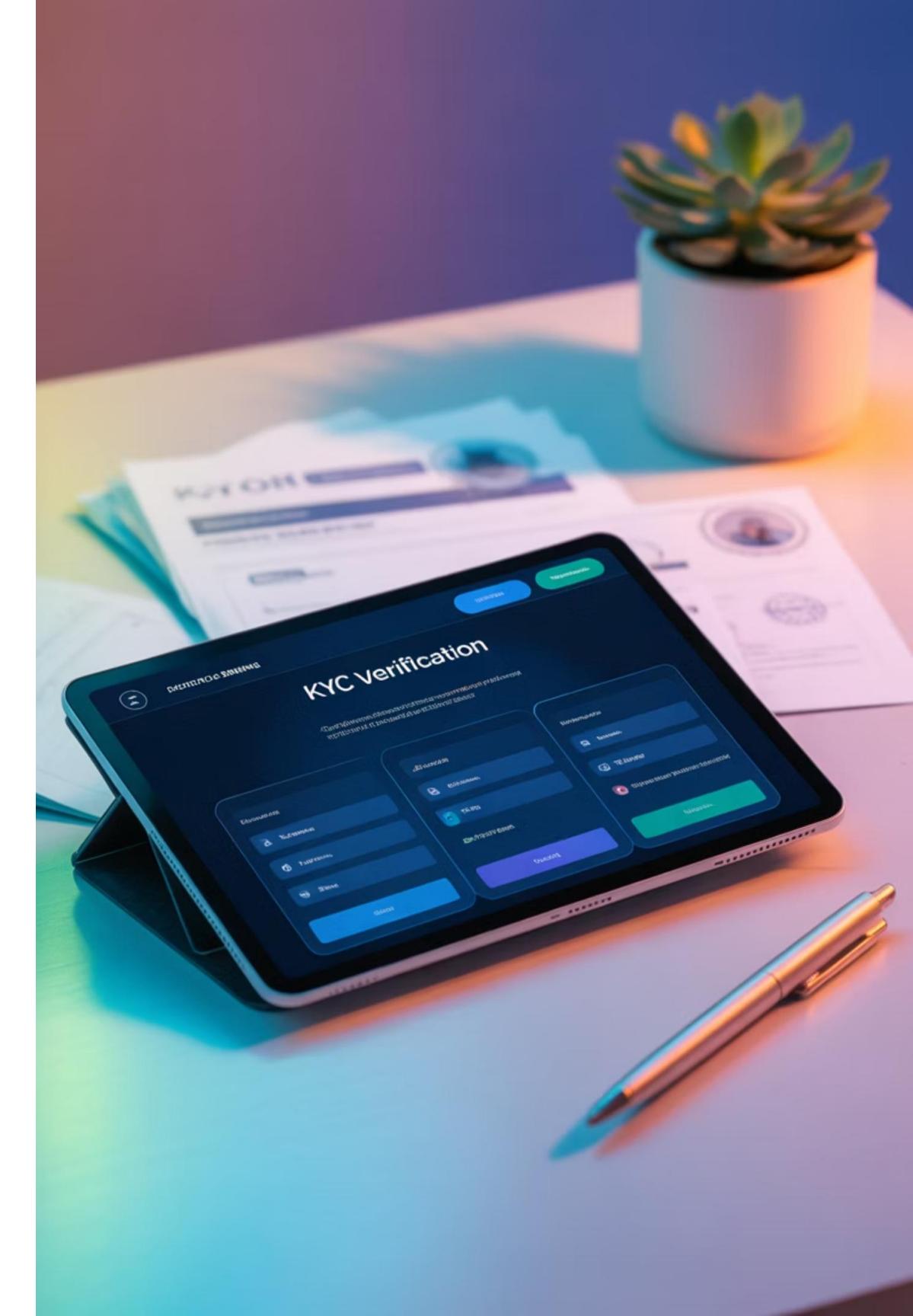
Enhanced Limits

₹2,00,000 maximum outstanding balance with risk-based transfer limits set by issuers.

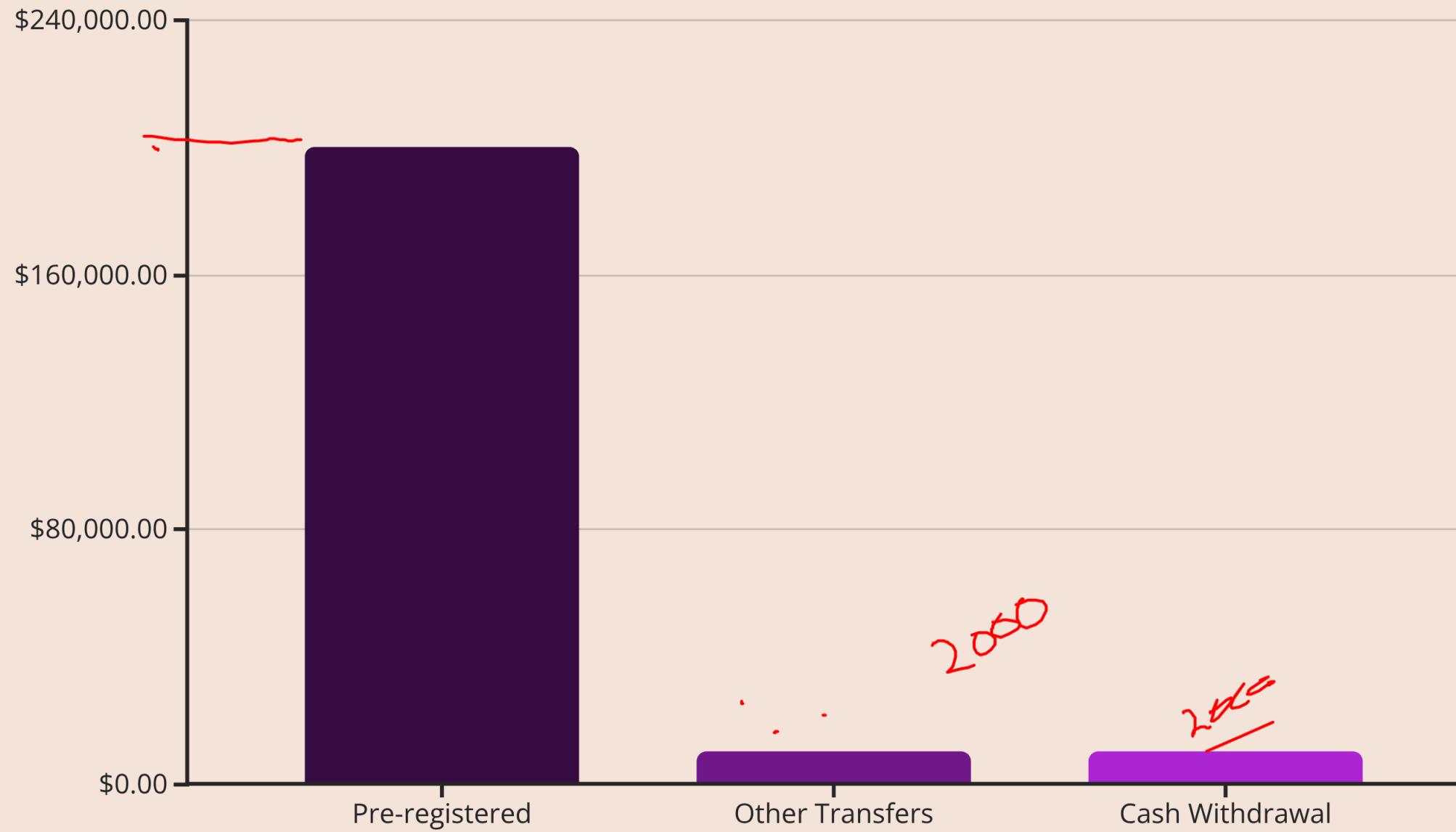


Pre-registered Beneficiaries

Up to ₹2,00,000 monthly transfers per beneficiary with bank account verification.

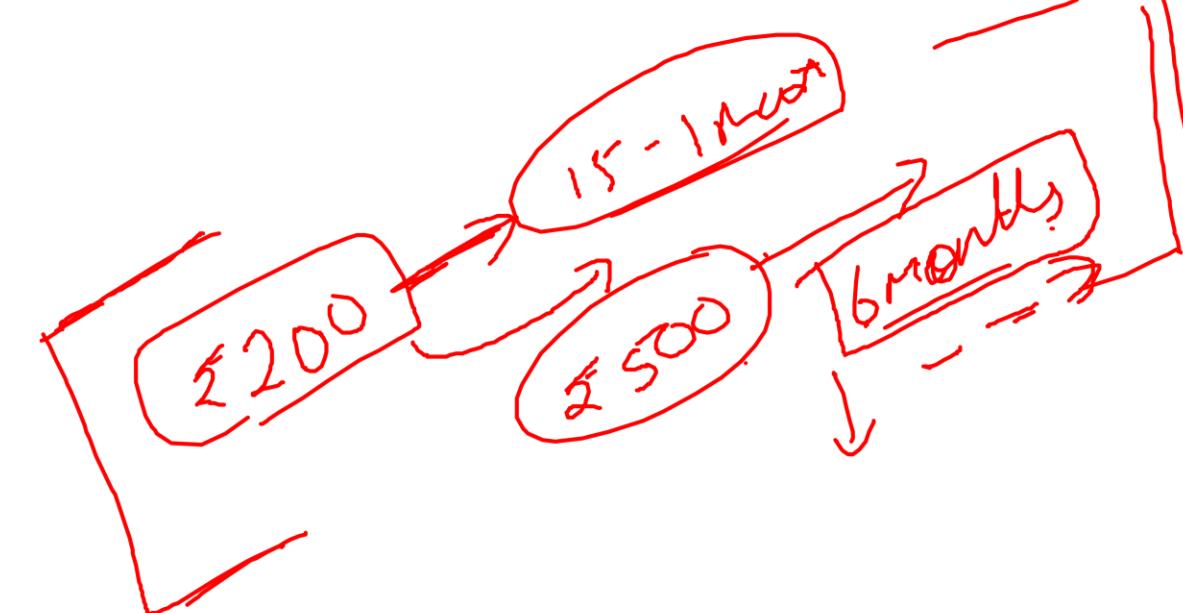


Transfer Limits and Cash Withdrawal



Bank-issued PPIs permit cash withdrawal across all channels with ₹2,000 per transaction limit.

Specialized PPI Categories



Gift PPIs

- Maximum ₹10,000 value
- Non-reloadable instruments
- No cash-out or funds transfer
- Risk-based approach for limits

Mass Transit System PPIs

- ₹3,000 maximum outstanding
- Automated fare collection focus
- Allied merchant usage permitted
- No cash-out or refund allowed

Operational Requirements

01

Issuance Format

Cards, wallets, or digital instruments only. Paper vouchers prohibited in all cases.

02

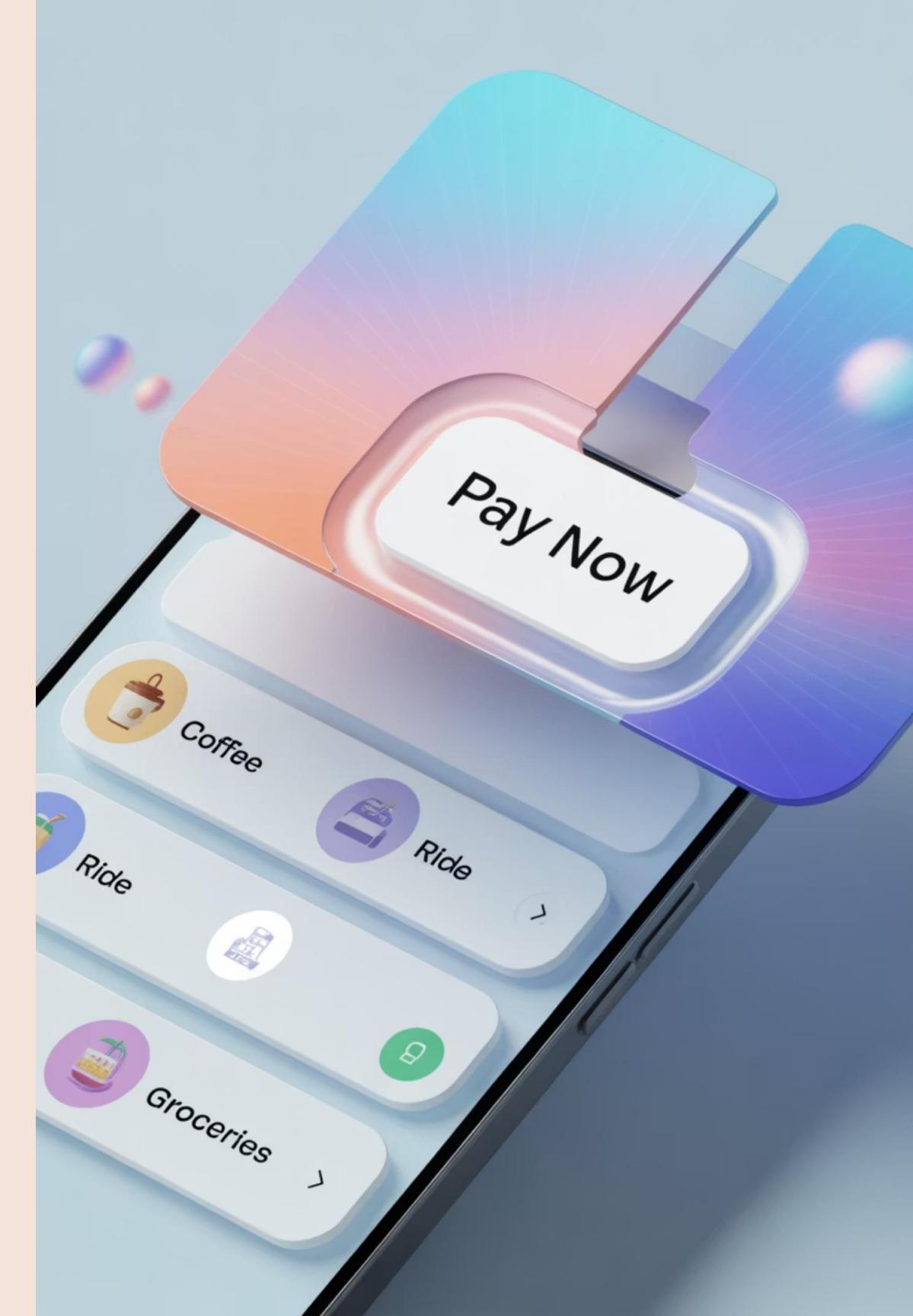
Currency and Interest

INR denominated instruments only. No interest payments permitted on balances.

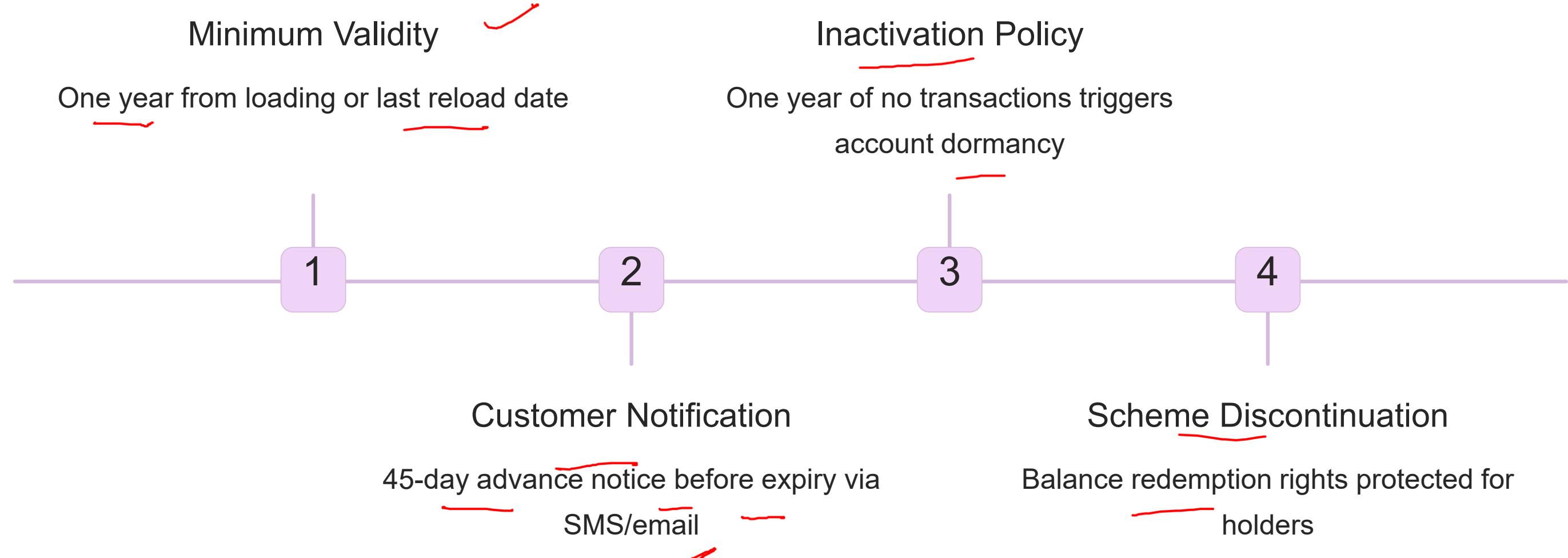
03

Loading Mechanisms

Cash, bank debit, or card loading through authorized outlets and business correspondents.



Validity and Redemption Framework

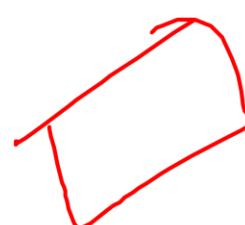


escrow solutions

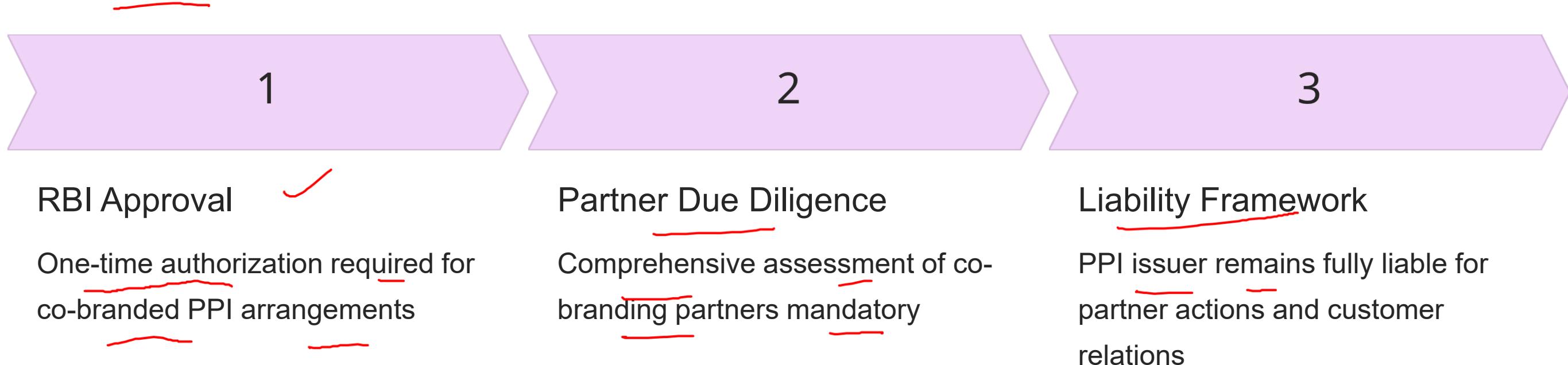
Escrow Account Management for Non-Bank Issuers

Critical Compliance Requirements

- Outstanding balances maintained in escrow accounts with scheduled commercial banks
- Day-end balance must equal outstanding PPI value plus merchant payments due
- Credit transactions must settle by day-end of the transaction date
- Core portion of balance may be transferred to interest-bearing accounts



Co-branding and Partnership Requirements



Cross-Border Transaction Capabilities

Outward Transactions

Full-KYC PPIs from AD-I banks permitted for FEMA-compliant purchases.

- ₹10,000 per transaction limit
- ₹50,000 monthly ceiling
- EMV Chip and PIN compliance required
- Explicit customer activation request needed

Inward Remittances

Money transfer service operators can issue full-KYC PPIs for beneficiaries.

- Up to ₹50,000 per remittance
- Excess amounts to bank accounts
- MTSS norms compliance required

Electronic Banking Evolution

Anytime Banking Reality

24x7 payment systems, core banking solutions, and interoperable ATM networks eliminate traditional banking hour constraints.

Corporate Banking Transformation

Remote terminals, customized CBS solutions, and ERP integration enable comprehensive corporate financial management.

Multi-Channel Service Delivery

Internet banking, mobile applications, and voice assistants provide comprehensive service access across all customer segments.



Mobile Banking and Customer Protection

₹10K

Cash-out Limit

Maximum per transaction through
agents or ATMs

₹25K

Monthly Velocity Cap

Per beneficiary transfer limit decided by
banks

₹5K

Encryption Threshold

End-to-end encryption required above
this amount

Enhanced customer protection through standardized turnaround times and compensation frameworks for failed transactions.

Compliance Excellence in Digital Payments

Revision

Key Takeaways for Financial Institutions

- Implement robust KYC processes for all PPI categories
- Establish comprehensive risk management frameworks
- Maintain strict escrow account compliance for non-bank issuers
- Develop customer-centric digital banking solutions
- Ensure regulatory alignment across all payment channels

Success in the evolving payments landscape requires balancing innovation with regulatory compliance while prioritizing customer protection and financial inclusion.



Thank You



Comment Your Feedback

