

# **Solving Access to Formal Credit at Scale**

*Bridging the Lending Gap in Rural & Semi-Urban India*

Submitted By:-

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# Understanding of the Problem Statement

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*Borrowers can't access credit. Lenders can't assess risk.*

## Context

- Launching a mobile app for rural & semi-urban India
- Needs to function on low-spec smartphones with limited bandwidth
- Must be simple & intuitive for low digital literacy users
- Enables instant personal loans with AI-driven underwriting

## Implications

- Without innovation, borrowers remain dependent on informal lenders
- Financial institutions face high risk & cost of servicing these segments
- Opportunity: Build an AI-enabled, explainable, lightweight underwriting agent to bridge access, reduce risk, and improve trust

## Key Problems to Solve

- Access Gap: Rural/semi-urban borrowers lack fair & quick loan access due to limited credit history
- Digital Divide: Low literacy + low-end devices → friction in adoption

- Operational Challenges: Traditional underwriting is slow, manual, and biased
- Trust Deficit: Borrowers often struggle with transparency & complex loan terms

# The Lending Gap - Two Realities

*Borrowers can't access credit. Lenders can't assess risk.*



## Borrower's Lens

**50%+** of rural & semi-urban Indians have no reasonable access to formal credit

**₹103T** credit shortfall faced by small businesses in rural & semi-urban India — left unserved by banks, forced to borrow informally.

**25%** of rural households are digitally literate—poor usability & low-spec devices mean many drop off before completing digital applications.



## Lender's Lens

**300M+** Indians are “new-to-credit”, thin files with no scoring history

**4.1%** Default rate for small loans in rural India – rising stress among first-time borrowers

**5 days** Typical rural/semi-urban disbursement time per SBI norms – still slower than informal channels

# The Opportunity – Bharat's Credit Revolution

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Digital infrastructure tailwinds – Aadhaar, UPI, OCEN, Account Aggregator → enabling low-cost, scalable underwriting.

**65%+**

smartphone penetration in rural India by 2025 →  
digital rails are in place.

**20%**

CAGR growth in lending demand from Tier-2/3 cities

**300M+**

Indians are “new-to-credit,” waiting to enter the formal system.

The above statements clearly highlight a massive untapped credit opportunity, waiting for the right platform to serve it.”

# Our Solution - AccelRate

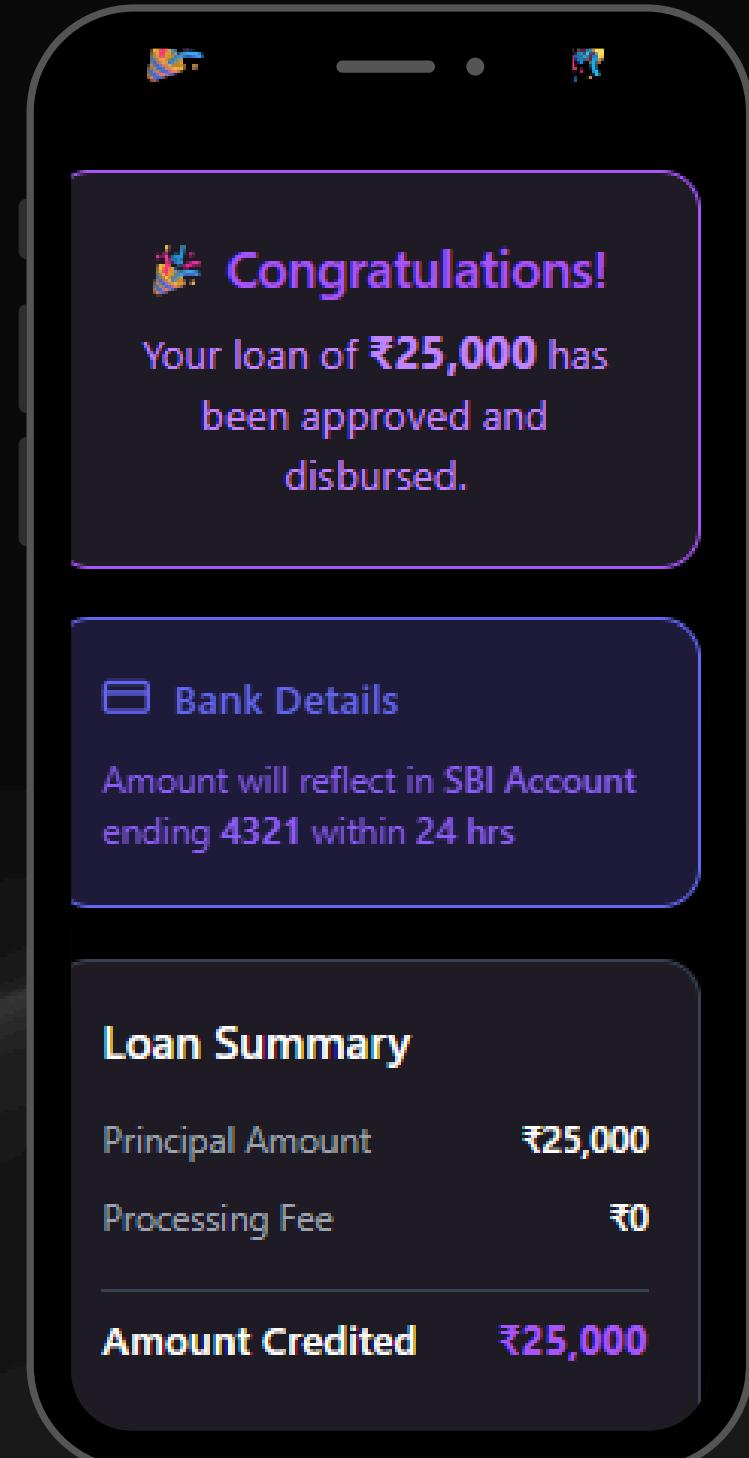
*AI-enabled underwriting to bridge the credit gap*



# AccelRate

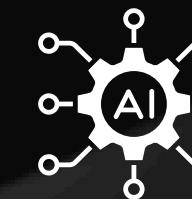
## What is AccelRate?

An AI-powered loan underwriting platform that bridges the gap between underserved borrowers and cautious lenders — built for Bharat's rural & semi-urban markets.



### Instant Personal Loans

Quick & paperless, tailored for small-ticket borrowers.



### AI-Powered Underwriting

Scoring beyond CIBIL, using alt-data (UPI, telco, utility).



### Lightweight, Low-Spec Ready

Optimized for budget smartphones & poor connectivity.



### Simple, Inclusive UX

Built for low digital literacy with easy onboarding.

# User Persona



## Rajesh Kumar - Semi-Urban Shop Owner

### Demographics

Age: 32  
Gender: Male  
Location: Semi-Urban town (Tier-3 city)  
Occupation: Kirana shop owner  
Income: ₹20,000 /month

### Psychographics

- Ambitious, wants to expand his business
- Seeks financial stability but cautious about debt
- Prefers mobile-based solutions (tech-friendly, uses UPI & WhatsApp for business)

### Goals

- Quick access to small business loans
- Simple, paperless process
- Predictable repayment terms

### Pain Points

- Lack of formal credit history → rejected by traditional banks
- Lengthy KYC/documentation process is frustrating
- Struggles to compare loan offers transparently



## Sunita Devi - Rural Dairy Farmer

### Demographics

Age: 40  
Gender: Female  
Location: Rural village  
Occupation: Dairy farmer (2-3 cattle)  
Income: ~₹12,000 /month (seasonal variations)

### Psychographics

- Community-oriented, values trust in lenders
- Moderate financial literacy (depends on family for major decisions)
- Wants stability for children's education & household security

### Goals

- Secure small loans for cattle purchase & farm inputs
- Repay flexibly, aligned with milk sales cycle
- Avoid dependence on informal moneylenders

### Pain Points

- Low awareness of digital loan options
- Finds loan terms confusing (interest rates, repayment schedules)
- Limited collateral → excluded from mainstream banks
- Lack of awareness with government schemes and policies

# AccelRate Feature Suite

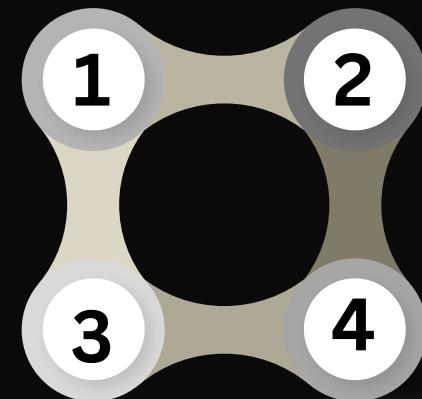
Built for Bharat. Powered by AI.



## Borrower-Centric Features (Inclusion & Accessibility)

### AI Alt-Data Scoring

unlocks credit for  
“new-to-credit” users



### Lightweight Digital KYC

Aadhaar/PAN + face  
match → easy onboarding

### Low-Spec & Offline Ready

works on budget phones &  
patchy networks

### Inclusive UX Design

local languages + voice assist +  
in - App Nudges



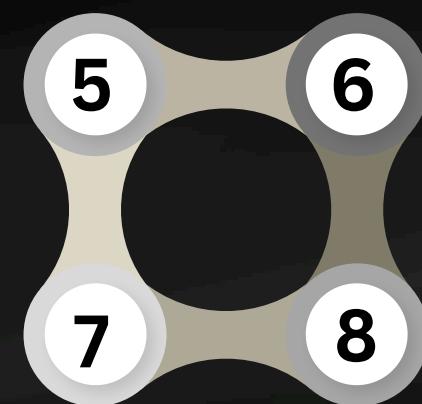
## Lender-Centric Features (Efficiency & Risk Management)

### Fraud Shield

AI detection of fake  
docs & misreporting

### Cost-Efficient and Accurate Underwriting

Check on more data  
points in less time without  
manual interference



## Opportunities and Explanation

Awareness about govt schemes  
as well as explanation about the  
whole process

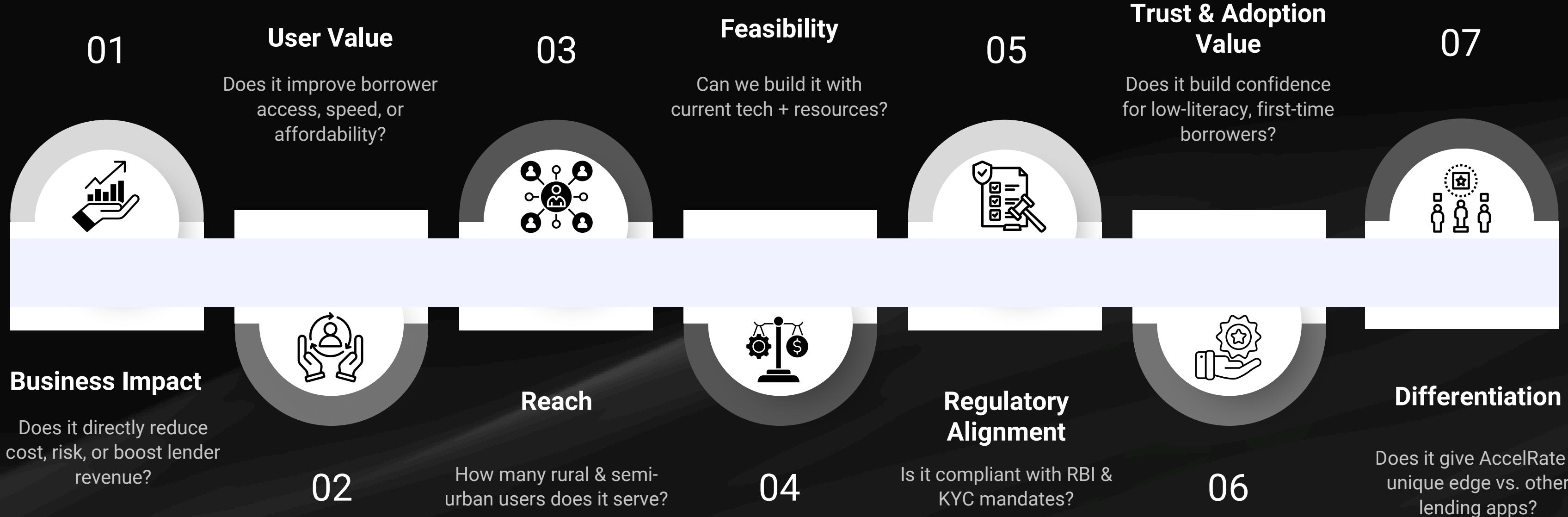
## Scalable API Platform

plug-and-play with  
banks/NBFCs/MFIs

*From Application to Approval — One Seamless AI Flow*

# Feature Prioritization Framework

*How to decide what to develop first*



# Scoring the Features

*Objective Prioritization for AccelRate*

Feature	Business Impact	User Value	Reach	Feasibility	Regulatory	Trust	Differentiation
AI Alt-Data Scoring	● High	● High	● High	● Medium	● High	● High	● High
Low-Spec & Offline	● Medium	● High	● High	● High	● High	● High	● Medium
Lightweight KYC	● High	● Medium	● High	● High	● High	● High	● Medium
Fraud Shield	● High	● Medium	● Medium	● Medium	● High	● High	● High
Instant Approvals	● High	● High	● Medium	● Medium	● High	● Medium	● High
Inclusive UX (Voice)	● Medium	● High	● High	● Medium	● Medium	● High	● High
Cost-Efficiency	● High	● Medium	● Medium	● High	● High	● Medium	● Medium
Scalable API Platform	● High	● Medium	● Medium	● High	● High	● Medium	● High

*Scoring table*

## Key Takeaways

### Phase 1 – Build First (MVP Backbone)

- AI Alt-Data Scoring → unlocks “new-to-credit” borrowers
- Lightweight Digital KYC → instant compliance, low friction
- Low-Spec & Offline Ready → ensures adoption in Bharat
- Instant Loan Approvals → delivers core promise of speed

### Phase 2 – Enhance & Differentiate

- Fraud Shield → stronger portfolio quality
- Inclusive UX (Voice & Local Language) → trust + accessibility at scale

### Phase 3 – Scale & Expand

- Cost-Efficient Underwriting → drives long-term unit economics
- Scalable API Platform → opens new B2B revenue streams with banks/NBFCs

# Minimum Viable Product: The Critical 6

## AI Alt-Data Scoring

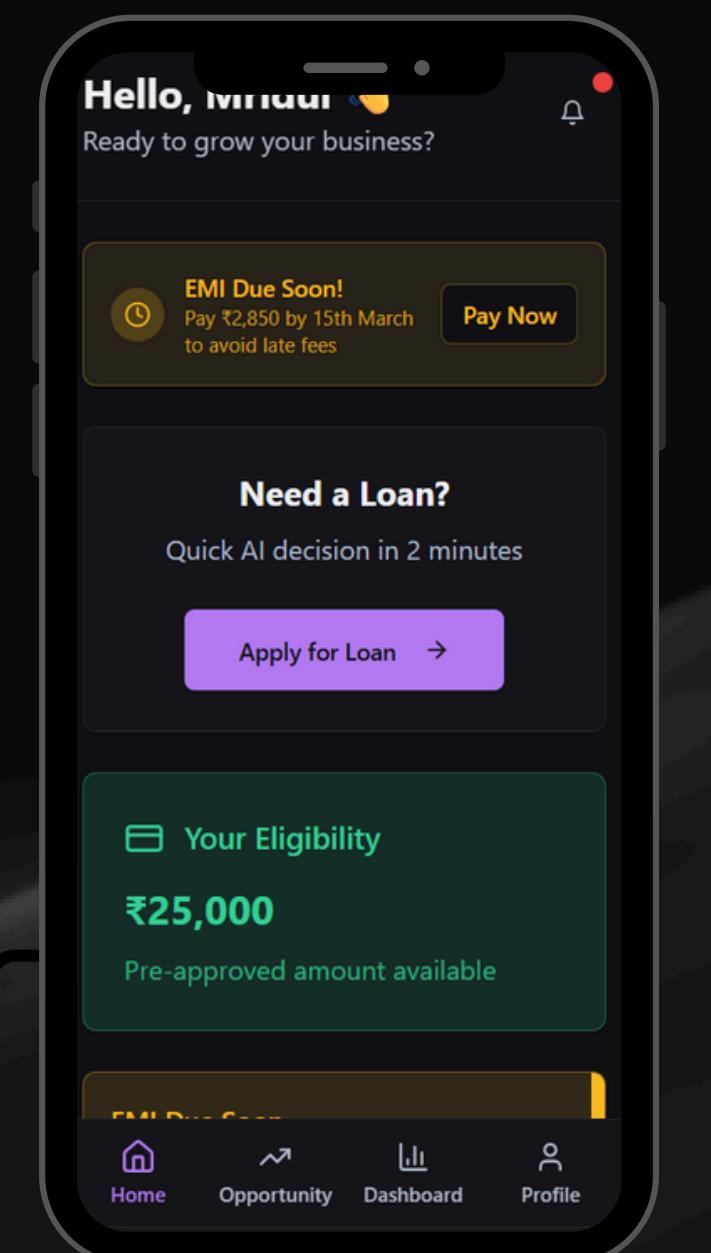
*Unlocking Credit for “New-to-Credit” Borrowers*

### The Problem

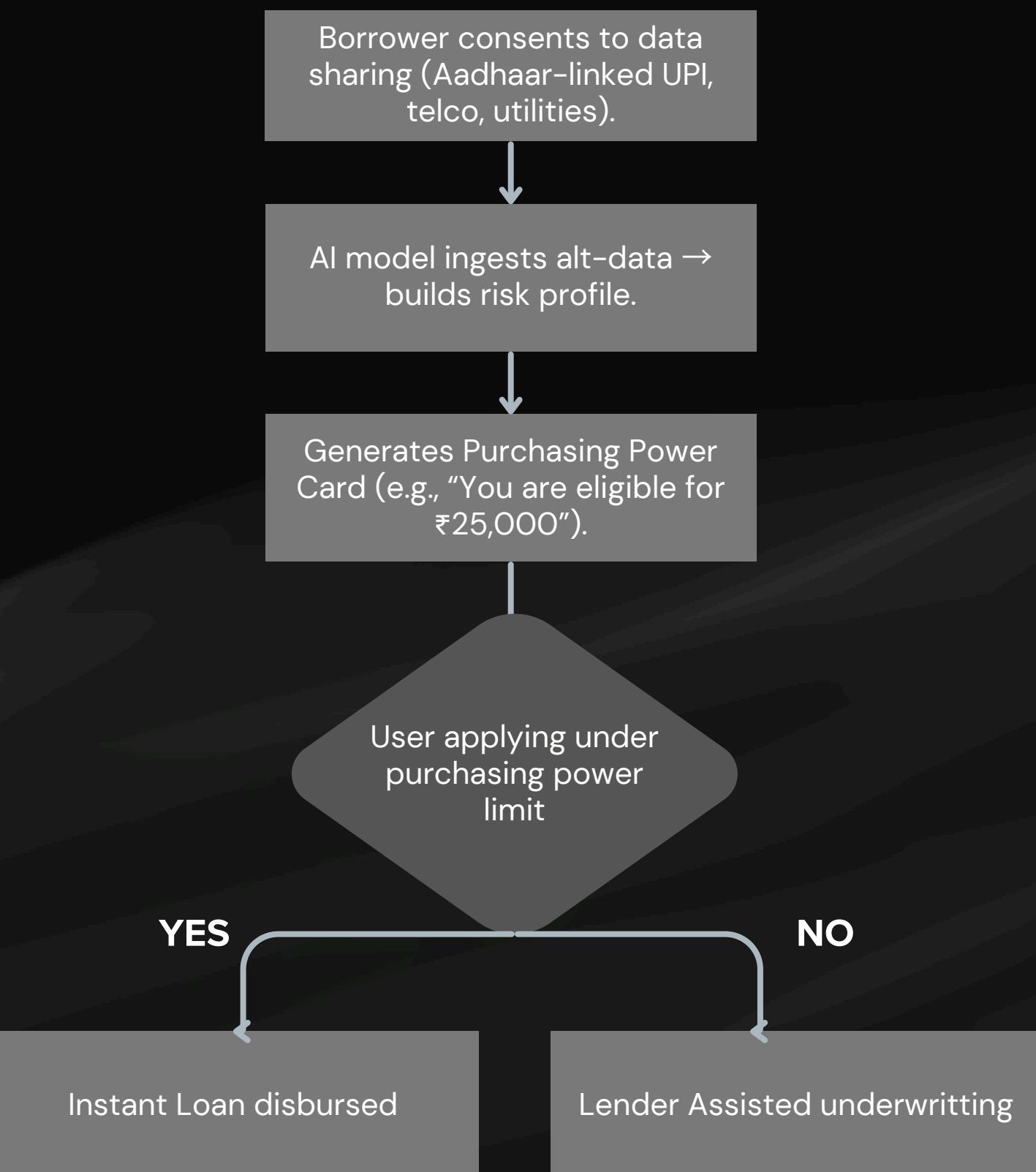
- 300M+ Indians are “new-to-credit” with no CIBIL/credit history.
- Traditional lenders → reject due to “thin files.”
- Result → borrowers excluded, lenders miss growth opportunity.

### Our Solution

- AI-powered risk scoring using alternative data sources:
  - UPI transactions
  - Mobile recharge & telco usage
  - Utility payments (electricity, LPG)
  - Bank inflows via Account Aggregator
- Combines into a Purchasing Power estimate → pre-approved loan limit displayed on Home.



## High Level User Journey



# Minimum Viable Product: The Critical 6

## AI Alt-Data Scoring

Unlocking Credit for “New-to-Credit” Borrowers

### Data Sources (Consent-First)

#### Phase 1 (MVP, high coverage):

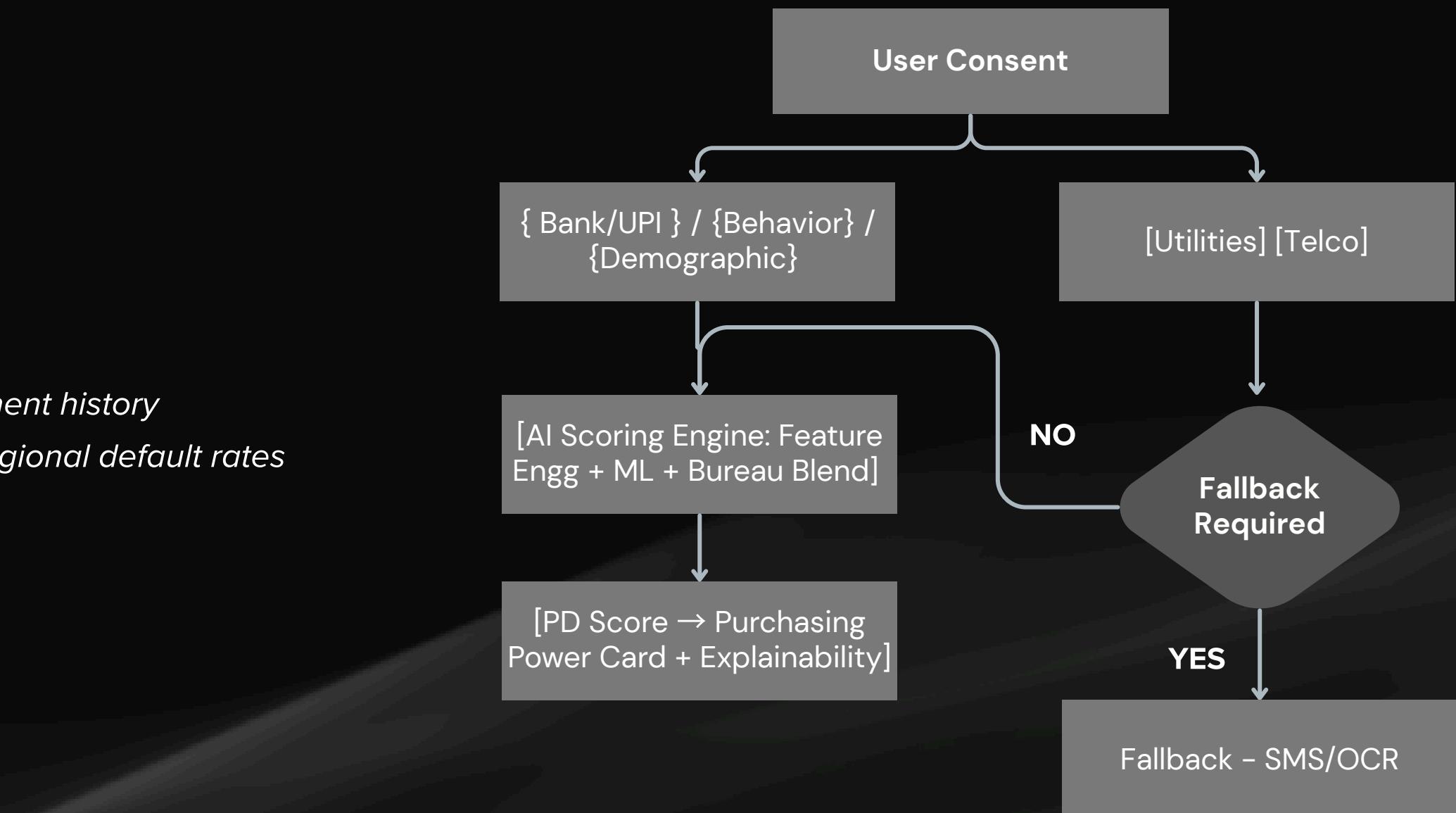
- Bank/UPI Transactions → via Account Aggregator (AA)
- ↴ Fallback: statement upload + OCR
- Behavioral Signals → in-app usage, EMI reminders, repayment history
- Demographics & Context → occupation, household size, regional default rates

#### Phase 2 (Next, as partnerships mature):

- Utility Bills → APIs | Fallback: photo/SMS parsing
- Telco Data → Telco APIs | Fallback: recharge SMS

If borrower has bureau score (CIBIL/Experian):

- Fetched with consent → blended into model



### Why this works out best ?

- Borrowers → Eligible even without CIBIL (inclusion)
- Lenders → Confidence boosted when bureau data exists (hybrid scoring)
- Product → Resilient in low-bandwidth & fragmented infra (fallbacks built-in)
- Regulators → Consent-first, encrypted, audit logs maintained

# Minimum Viable Product: The Critical 6

## Model Design: Practical AI Scoring for AccelRate

Blending Alt-Data + Bureau for Reliable PD

### Inputs & Features

- UPI, bank inflows, bills, recharge cadence, profile, behavior
- If bureau score exists → blended

### Model

- Alt-data: LightGBM / XGBoost
- Bureau: Logistic Regression proxy
- Meta-model: Logistic blend → PD (0–1)

### Decisions

- $PD \leq 0.03$  → Auto-approve, high limit
- $0.03–0.08$  → Approve, medium limit
- $0.08–0.18$  → Conditional, reduced limit
- $PD \geq 0.18$  → Manual review / reject

### Safeguards

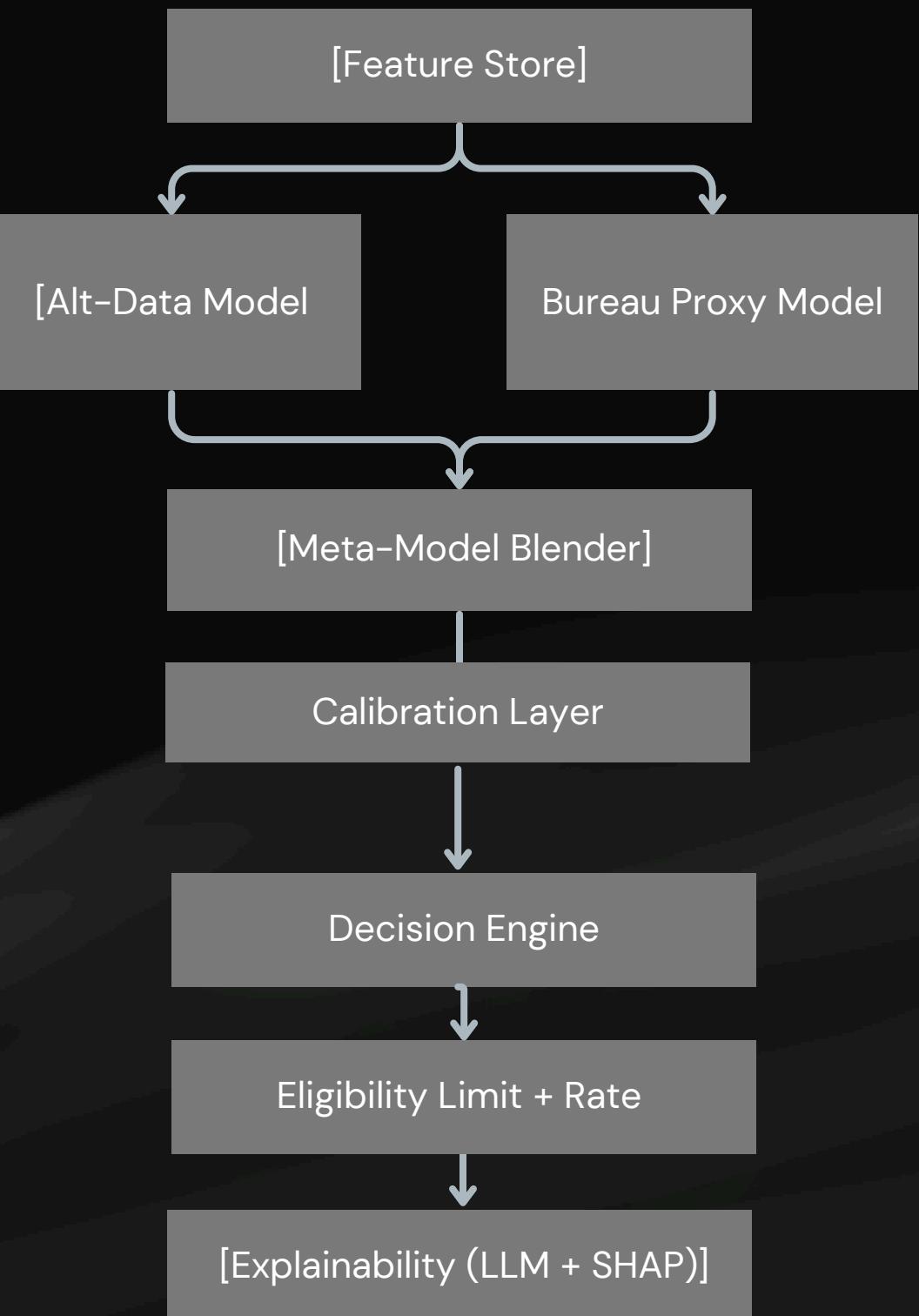
- Fallback model if missing data
- Route to lender if uncertainty high
- Consent-first, encrypted, audit-ready

### Explainability

- SHAP + LLM → top drivers explained in local language

### Governance

- Drift monitoring, bias checks, human-in-loop audit



Reliable PD estimation in <500ms – blending alt-data + bureau, explainable & regulator-ready

# Minimum Viable Product: The Critical 6

## Onboarding & Lightweight KYC

Frictionless Onboarding for Bharat

### The Problem

- Rural borrowers drop off early due to:
  - Confusing sign-up flows
  - English-only interfaces
  - Complex KYC requirements
- Lenders cannot disburse without verified KYC.

### Our Solution → Borrower-Friendly Onboarding

#### Flash Screen → Sign-in / Sign-up

- Mobile number + OTP login
- No passwords (OTP only, low friction)

#### Language Selection (First Step)

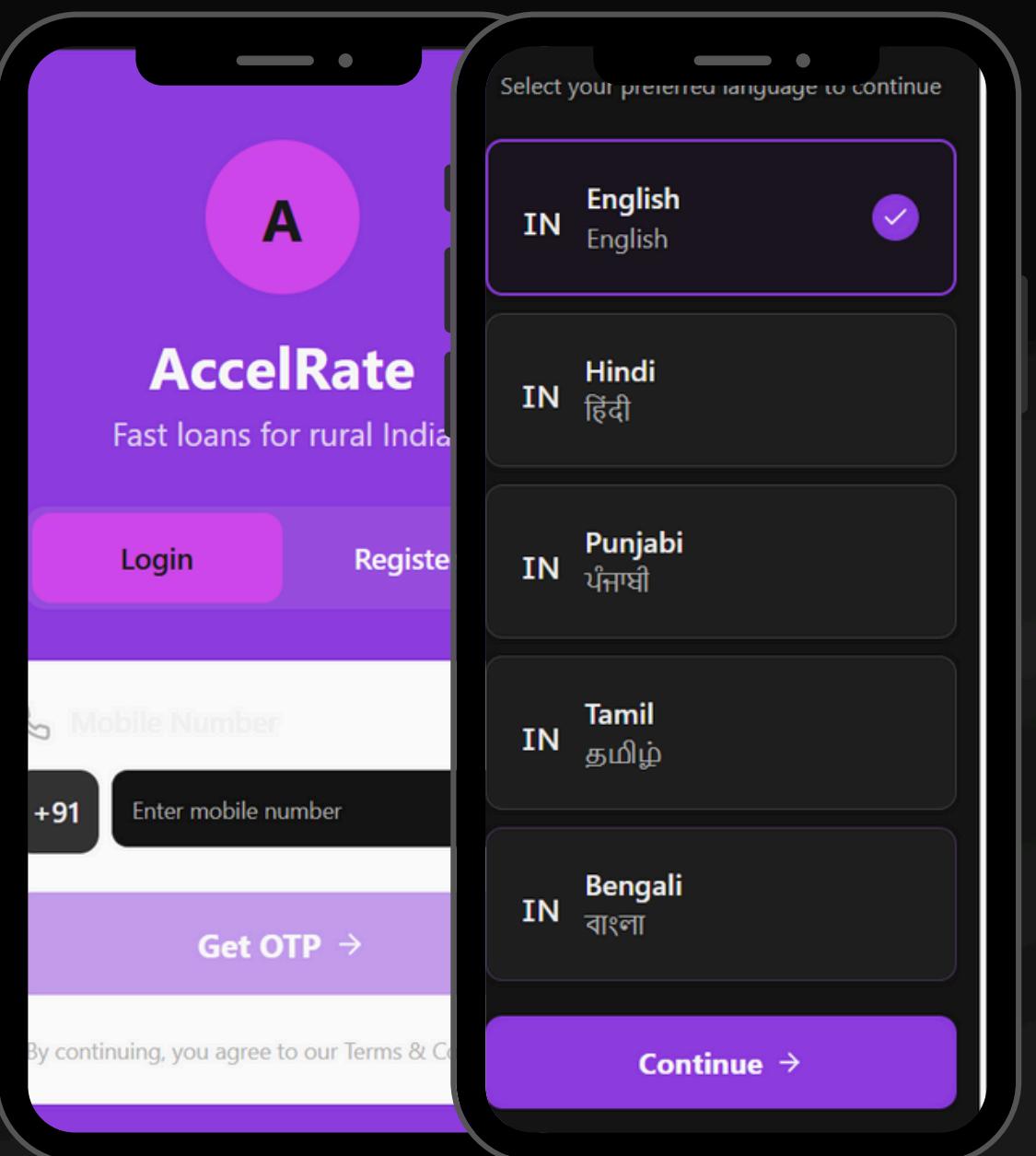
- Prompt after sign-up: "Choose your language"
- Supports Hindi, English, regional (Punjabi, Tamil, etc.)

#### In-App Nudges & Guidance

- Visual cues (green ticks, progress bar)
- Voice prompts / chat-based instructions for low literacy

#### Lightweight KYC (AI-enabled)

- Aadhaar/PAN verification via APIs
- Selfie → AI face match + liveness detection
- Fraud Shield → tampered doc detection
- Status Card → "✓ KYC Verified" or simple rejection reason



### Why It Matters

- Borrowers → Smooth entry, feels local & inclusive
- Lenders → Compliant KYC with fraud checks
- Product → Reduces drop-offs in early funnel (higher activation)

[Flash Screen]



[Sign-in / Sign-up]

(Mobile no. + OTP login, no password)



[Language Selection]

(Choose Hindi / English / Punjabi / Tamil etc.)



[In-App Nudges & Guidance]

- Visual cues (green ticks, progress bar)
- Voice / chat prompts for low literacy



[Lightweight KYC]

- Aadhaar/PAN Verification (API)
- Selfie → AI Face Match + Liveness
- Fraud Shield → detect tampered docs



[KYC Status Card]

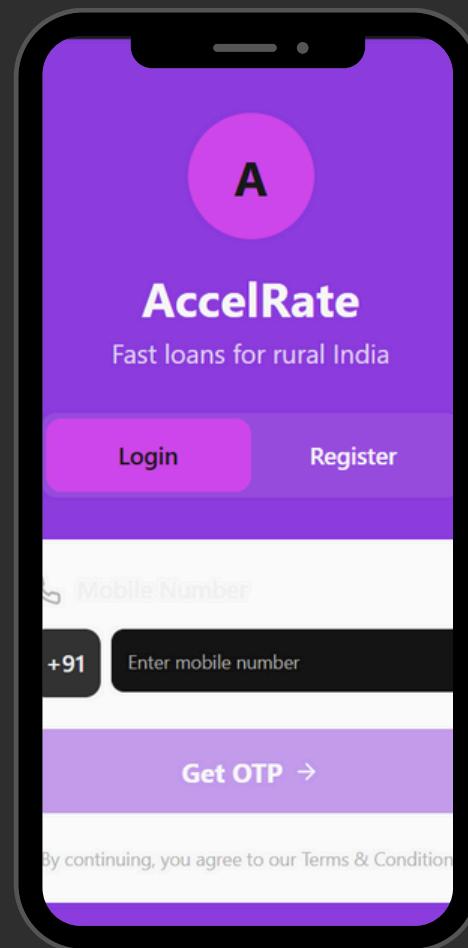
- ✓ Verified → proceed to Loan Application
- ✗ Failed → simple reason + retry / agent fallback

# Minimum Viable Product: The Critical 6

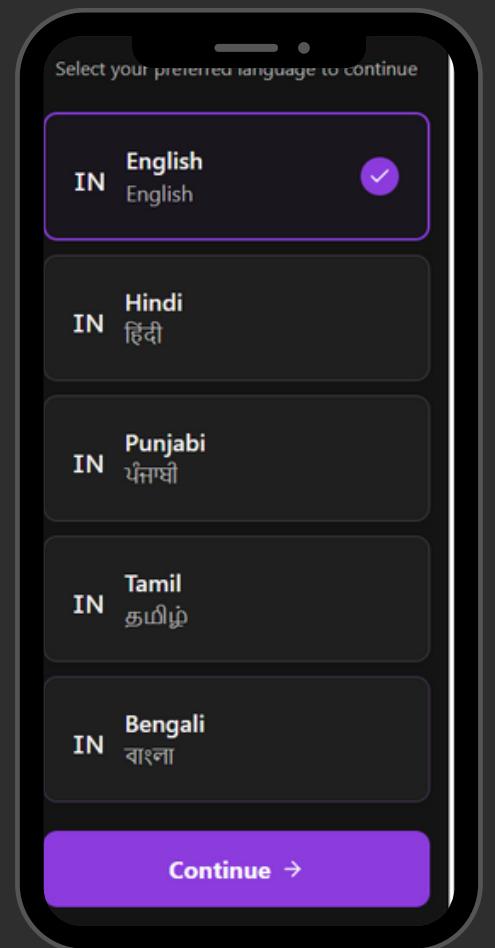
## Onboarding & Lightweight KYC

Screen by Screen Journey

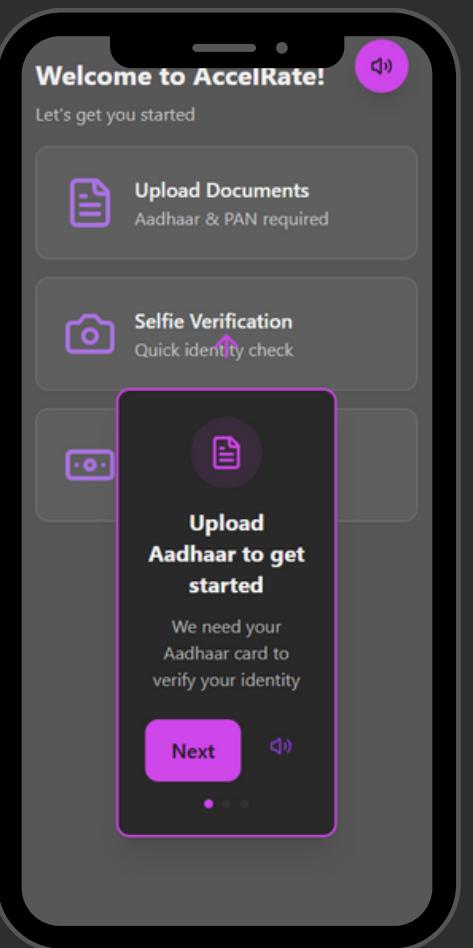
Sign In/ Sign Up page



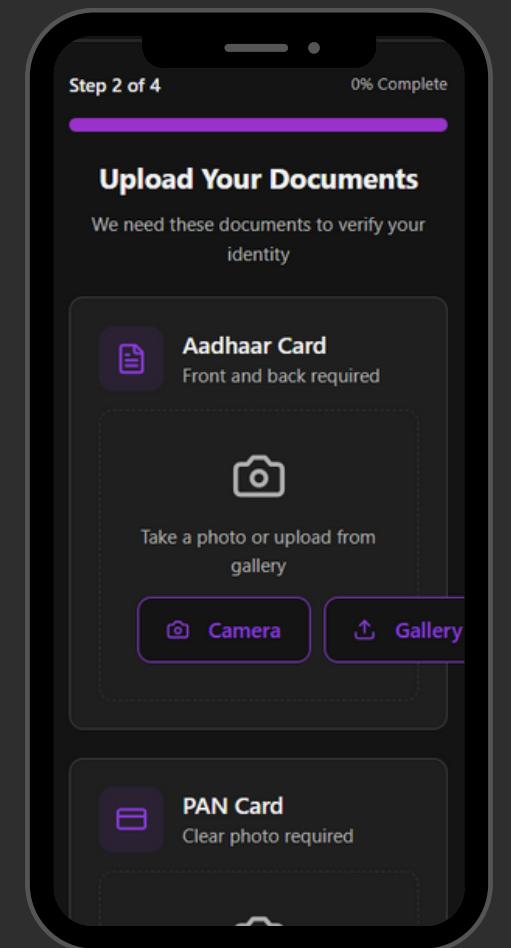
Language Selection



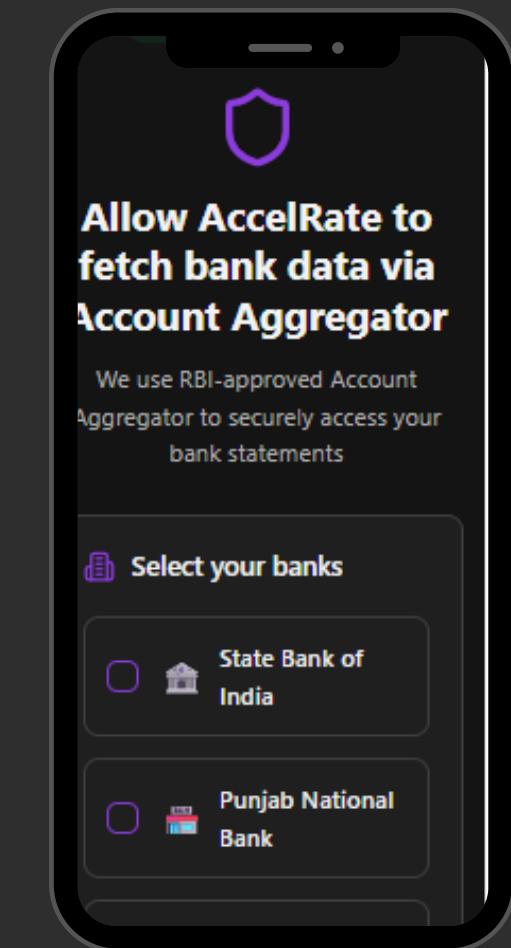
In App Nudges with  
AI voice assist



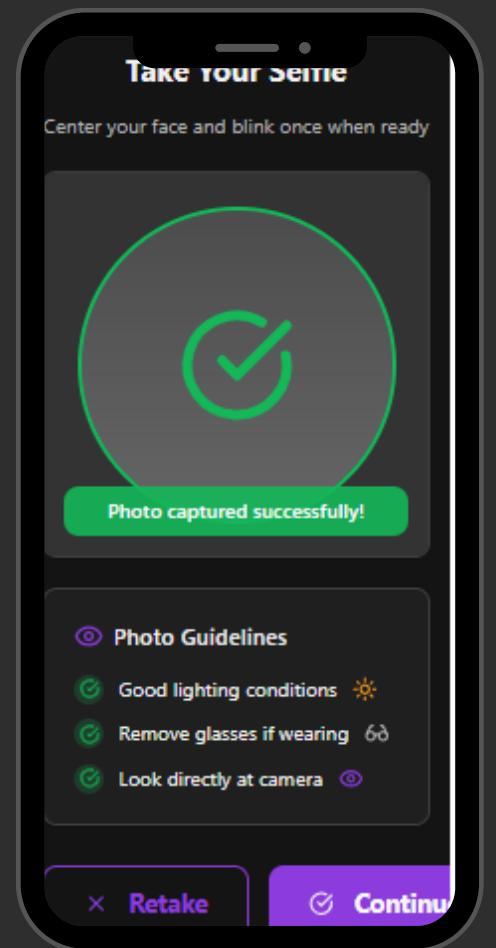
Document Upload



AA consent screen



Selfie and Liveness  
Check



No passwords required, just simple OTP authentication

User can select from list of languages

In App Nudges and voice assist at every step to help people moving forward

Least complex UI and UX for seamless experience

Users can select from list of Banks, NBFC etc

Fully guided and low specification required

# Minimum Viable Product: The Critical 6

## Loan Application & Underwriting Flow

Instant when possible, lender-assisted when needed

### The Problem

- In Bharat, borrowers face:
  - Long approval times (weeks, paperwork).
  - Opaque rejections (no reason given).
  - Limited transparency once an application is submitted.

### Our Solution — Dual-Track Underwriting

1. Home CTA → Borrower taps “Apply for Loan.”

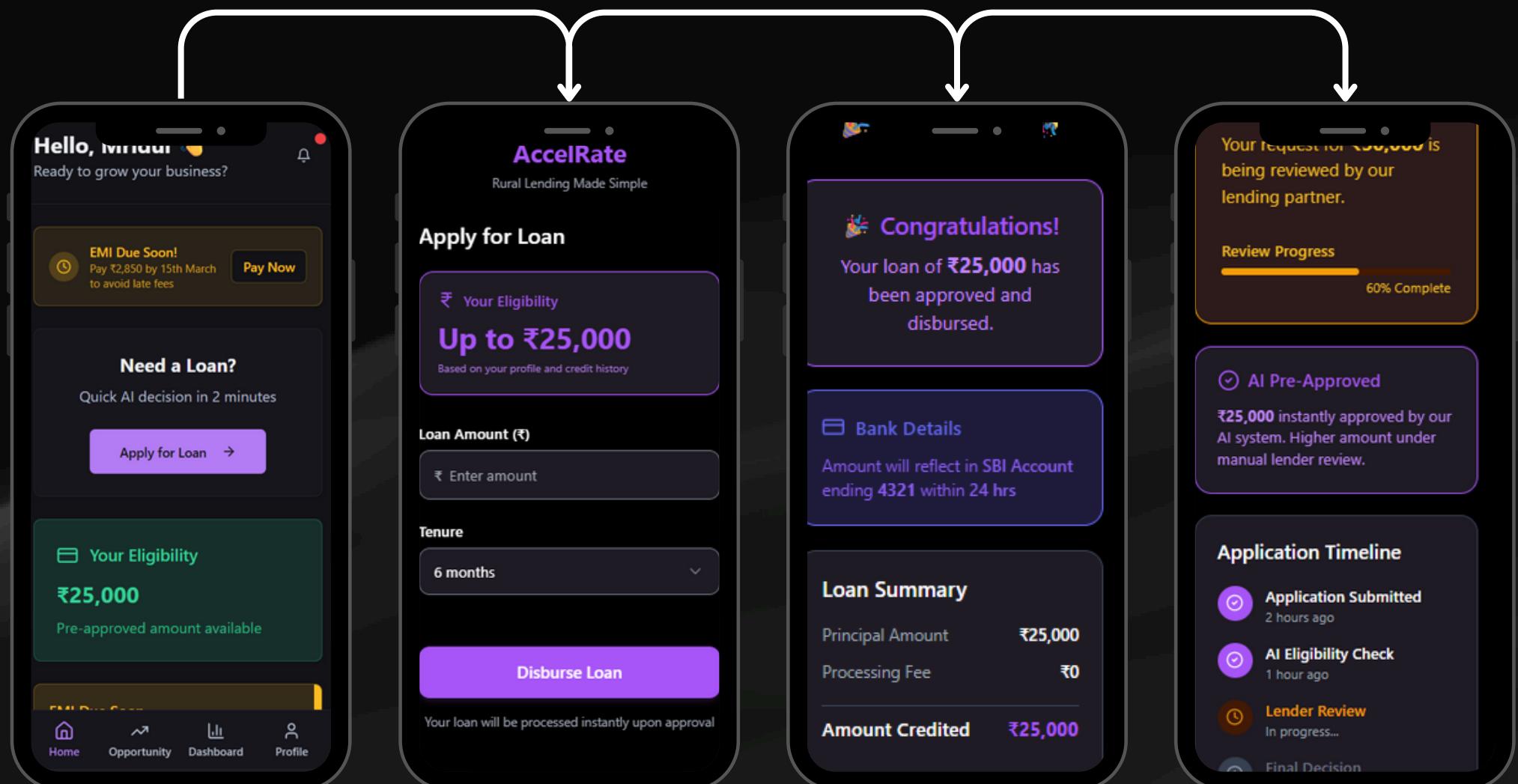
2. Eligibility Check (AI Scoring)

- If amount  $\leq$  Purchasing Power Limit → Instant AI approval.
- If amount  $>$  limit OR data uncertain → Route to Lender-Assisted Flow (AI risk score + reason codes → human review).

3. Application Transparency

- Borrower sees traffic-light status:

- Green Approved instantly
- Yellow Pending (with lender)
- Red Rejected (with reason in chosen language)



### Why It Matters

- Borrowers → No dead ends; always a chance (AI or assisted).
- Lenders → AI handles 70% of volume; humans focus only on edge cases.
- Product → Balance of inclusion + risk control = scalable model.

User taps on “Apply for a loan” →

Fills in the details

Instant Loans

Fallback to Agent  
Assisted Underwriting

if loan amount > purchasing power

# Minimum Viable Product: The Critical 6

## Application Tracking & Explainability

Transparent, simple, and local-language updates

### The Problem

- Borrowers often feel “in the dark” once they apply.
- Rejections are opaque → reduces trust.
- Low-literacy borrowers struggle to interpret complex loan status updates

### Our Solution

#### 1. Dashboard Tab

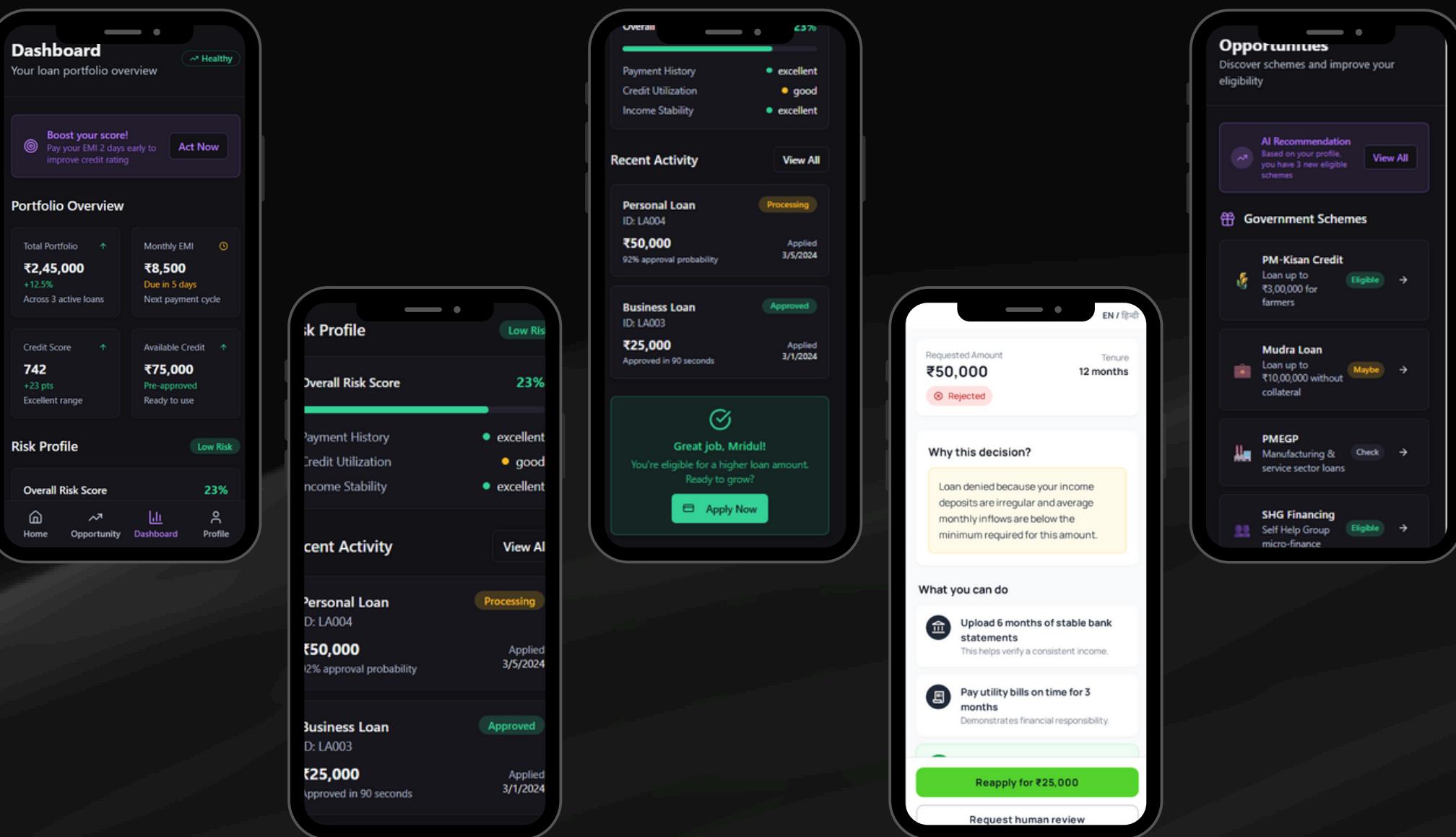
- Shows all past & current loan applications.
- Traffic-light status (● Approved, ● Pending, ● Rejected).

#### 2. Status Detail View

- Loan amount, tenure, lender decision.
- LLM-powered plain-language explanations for decisions.
  - Example: “Loan denied because your income deposits are irregular.”
- Translated into borrower’s local language.

#### 3. Borrower Nudges

- If rejected → actionable tip (“Pay bills on time to improve approval chances.”)
- If approved → EMI reminders in-app + SMS/WhatsApp/IVR.
- Opportunity tab spreading awareness about govt. schemes



# Minimum Viable Product: The Critical 6

## Lender Dashboard

AI transparency & control for lenders

### The Problem

- Lenders hesitate to trust AI-only decisions.
- Need visibility into borrower risk, fraud checks, and approval pipelines.
- Manual underwriting today is slow (₹500–₹1000 cost per file).

### Why It Matters

- Borrowers → Faster approvals, transparency.
- Lenders → Lower cost per file, more confidence in AI.
- Product → Builds trust with banks/NBFCs → scale partnerships.

### Our Solution — Lender Dashboard

#### 1. Borrower Application View

- Loan ID, requested amount, tenure.
- AI Risk Score (PD value + traffic-light).
- Top 3 drivers of decision (via SHAP).

#### 2. Fraud & KYC Verification Tab

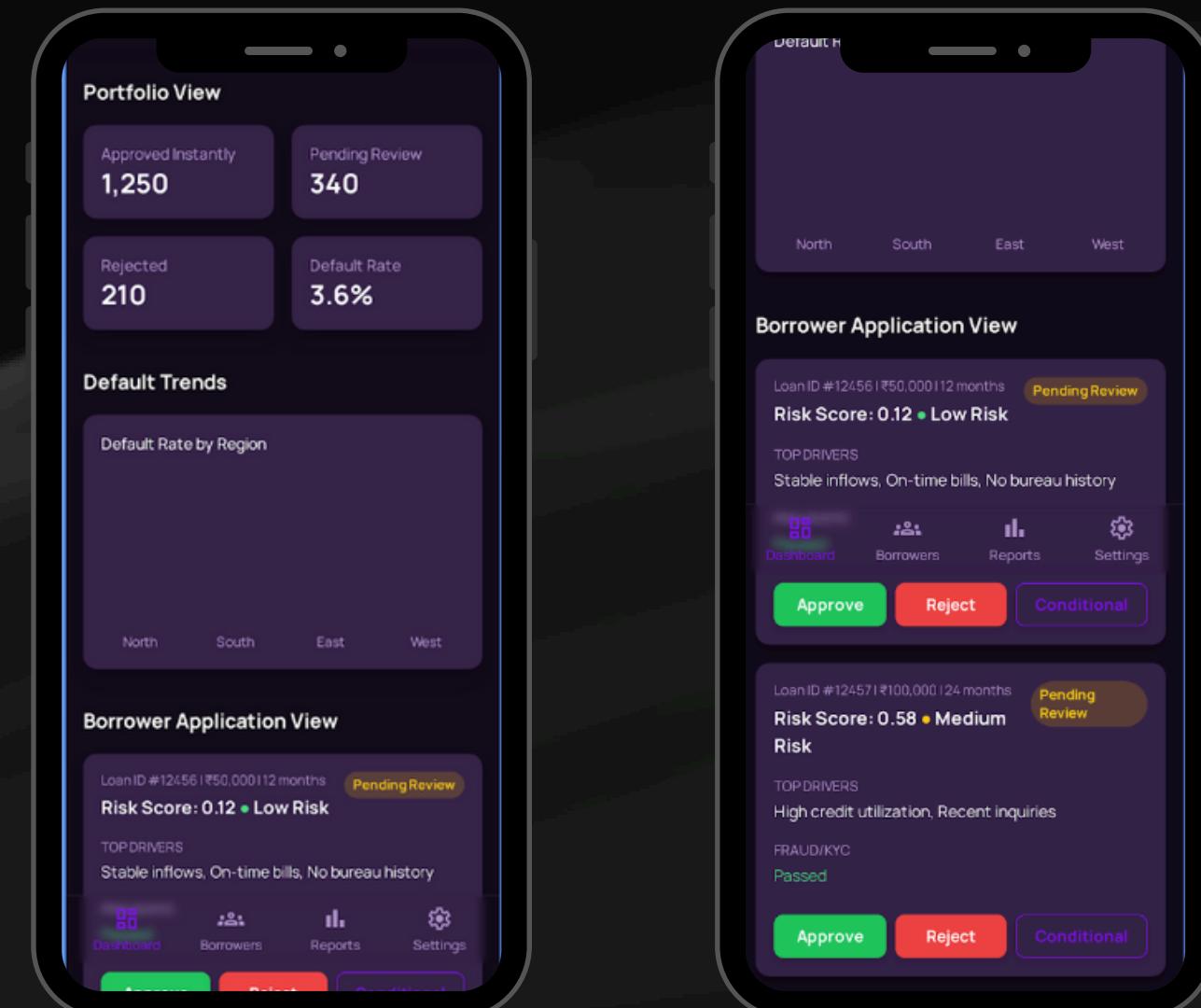
- Doc authenticity check results (tampered / mismatched / passed).
- Liveness selfie check status.

#### 3. Portfolio View

- Real-time pipeline: # approved instantly vs pending vs rejected.
- Default trends segmented by region/occupation.

#### 4. Action Buttons

- Approve / Reject / Conditional Approve.
- For flagged cases, ability to override AI with notes.



# Minimum Viable Product: The Critical 6

## Offline Resilience & Resume Logic

Designed for patchy Bharat connectivity

### The Problem

- Many borrowers in Tier-2/3 towns face:
  - Patchy 3G/4G, frequent drops.
  - Low-spec phones with storage/memory limits.
- Traditional apps → uploads fail → borrowers drop off.

### Why It Matters

- Borrowers → No frustration, less drop-off.
- Lenders → More completed KYC files → larger funnel.
- Product → Differentiator in Bharat → “trustworthy even offline.”

### Example User Flow

- Borrower uploads Aadhaar → connection drops.
- App shows: “Upload paused, will resume automatically.”
- Next time signal is back → upload continues → borrower notified.
- Borrower sees Eligibility Card update without re-doing process.

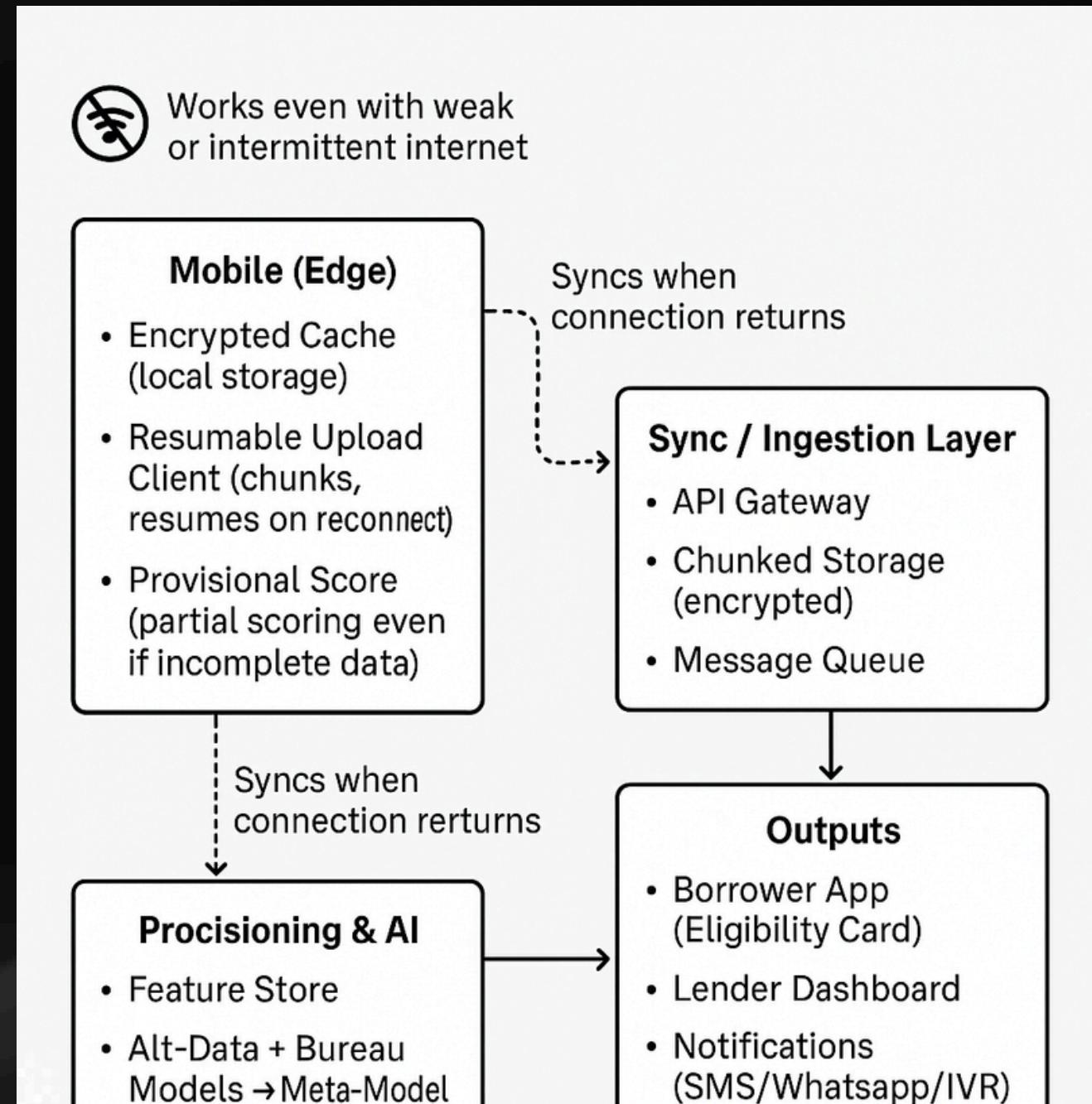
### Our Solution — Offline-First Design

1. Resumable Uploads
  - Large files (Aadhaar, PAN, bank statements) broken into chunks.
  - Auto-resumes from last checkpoint if connection drops.
2. Background Sync
  - All consent + KYC tasks queued locally.
  - Syncs automatically when signal improves or Wi-Fi detected.
3. Partial Scoring
  - If some data (UPI/behavior) available → show provisional eligibility instantly.
  - Final eligibility recalculated when full data syncs.
4. User Feedback
  - Progress bars + nudges (“Don’t worry, we’ll finish this in background”).
  - Local language reassurance → avoids panic or mistrust.

# Minimum Viable Product: The Critical 6

## Tech Architecture — Offline, Sync & Data Flow

Where data lives, how sync & scoring work, and how we keep it secure & auditable



### Key Highlights

- Encrypted Local Cache → Stores KYC docs, consent logs securely on device.
- Resumable Uploads → Chunked uploads auto-resume on reconnect.
- Provisional Scoring → Instant eligibility shown even if partial data is available.
- Background Sync → Queue + retry logic until all data synced.
- Secure Cloud Processing → Feature store + AI models run once sync completes.
- Outputs Everywhere → Borrower App (Eligibility Card), Lender Dashboard, Notifications.

### Why It Matters

- Borrowers → No frustration when internet drops.
- Lenders → Get full files reliably, fewer incomplete applications.
- Product → Differentiator in Bharat: “Works even offline.”

# Voice & Chat Guidance (LLM Co-Pilot)

Making credit applications conversational & inclusive

## The Problem

- Many rural & semi-urban borrowers:
- Struggle to navigate app screens alone.
- Drop off during KYC or loan application.
- Need help, but agents aren't always available.

## Our Solution — AI Co-Pilot

### 1. Voice Guidance

- Every critical step (KYC, loan application, EMI payment) has optional voice prompts in local language.
- Eg: "Please upload your Aadhaar now" → spoken in Hindi/Punjabi/etc.

### 2. Chat Assistant

- In-app chatbot powered by LLM, fine-tuned on product FAQs + RBI-compliant loan guidelines.
- Can answer:
  - "Why was my loan rejected?"
  - "How do I repay EMI?"
  - "What documents do I need?"

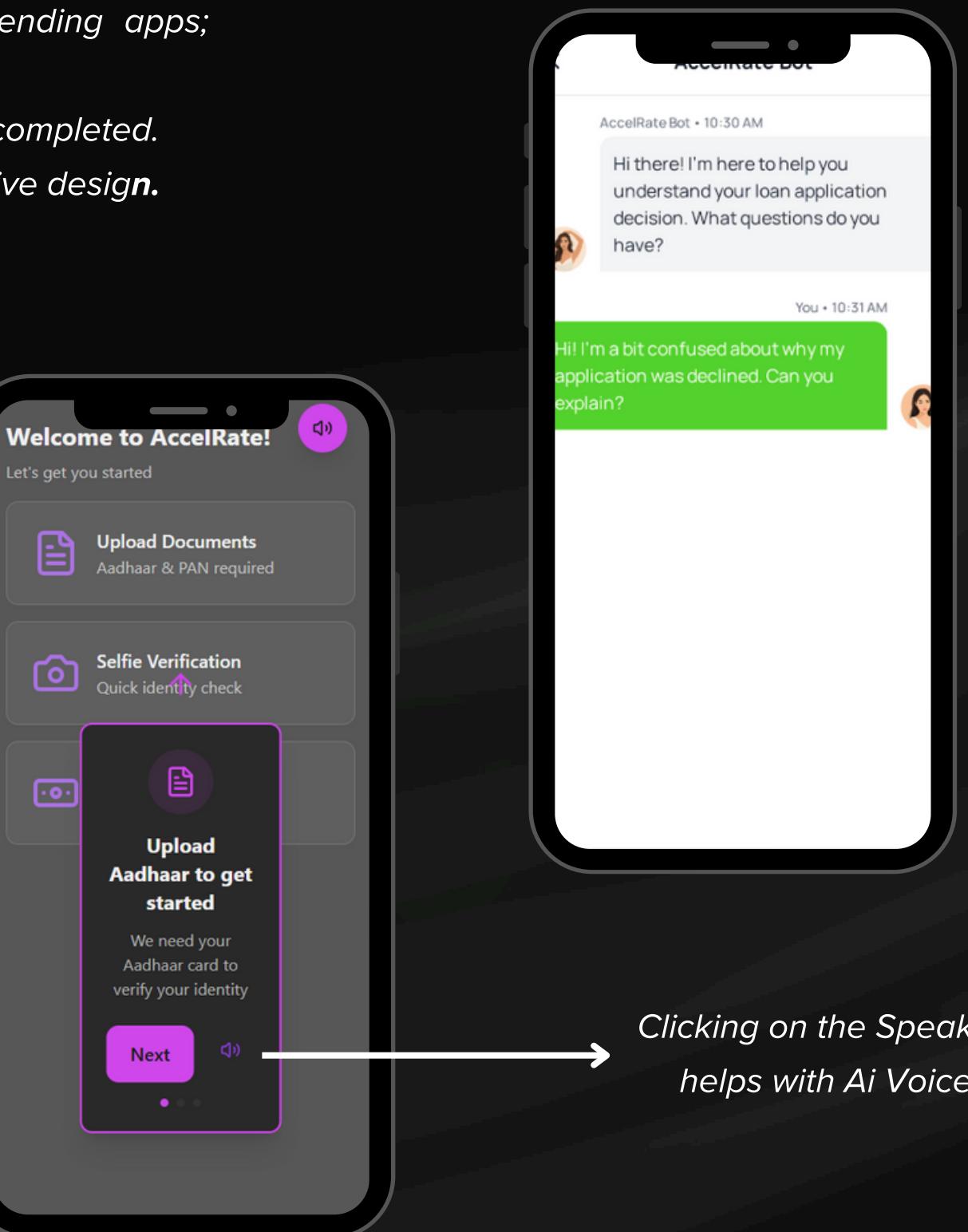
### 3. Bharat-Ready UX

- Simple buttons: Listen Again / Speak Response.
- Works in offline mode → queues question → syncs answer when online.

## Why It Matters

- Borrowers → Reduces fear of using digital lending apps; higher completion rates.
- Lenders → Fewer drop-offs = more applications completed.
- Product → Differentiates AccelRate → truly inclusive design.

## Chatbot Assist



Clicking on the Speaker button helps with Ai Voice Assist

# Security & Compliance by Design

*Safe, compliant, and regulator-ready*

## Core Principles

- *Consent First* → Every data pull (AA, KYC, utility) logged with timestamp + user approval.
- *End-to-End Encryption* → TLS in transit, AES-256 at rest, KMS-managed keys.
- *Data Minimization* → Only derived features stored permanently; raw docs auto-deleted after verification

## Fraud & Risk Controls

- Device fingerprinting & anomaly detection (duplicate IDs, tampered docs).
- AI-powered fraud shield for KYC (face mismatch, forged Aadhaar/PAN).
- Manual review fallback for flagged cases.

## Regulatory Alignment

- RBI AA Framework for bank data.
- UIDAI-compliant Aadhaar verification.
- Audit-ready logs of consent & model outputs.
- Explainability layer for borrower fairness (local language reasons).

## Why It Matters

- Borrowers → Trust the app → higher adoption.
- Lenders → Confidence to rely on AI + smooth audits.
- Product → Bharat-ready, regulator-friendly, scalable.

# Defining Success: KPIs That Matter

*Measuring inclusion, trust, and scalability*



## Northern Star Metric -

*Number of New-to-Credit (NTC) Borrowers Successfully Onboarded + Approved per Month*

### Why ? -

- Ties directly to problem statement → inclusion.
- Drives both adoption (borrowers) and revenue (lenders).
- Correlates with all other metrics: more NTC borrowers → more disbursals, higher lender adoption, bigger market impact

## Funnel / Conversion Metrics

- **Onboarding Completion %** → % who finish KYC after starting.
- **Loan Application → Approval %** → drop-off between Apply and Approve.
- **Avg. Session Time (Onboarding)** → are users spending too long?

## App Reliability Metrics

- **Resume Success Rate** → % of offline uploads that successfully sync.
- **Crash-Free Sessions %** → app stability on low-spec devices.
- **Avg. Upload Retry Count** → network resiliency measure.

## AI / Model Performance Metrics

- **PD Calibration Error** → how well predicted PD matches observed defaults.
- **% of Approvals Auto-Decided by AI** → workload offloaded from lenders.
- **Explainability Coverage %** → % of borrowers who get human-readable reason

## Outcome Metrics

### Borrower Activation Rate

→ % of users who complete onboarding + KYC  
(Directly shows inclusion and drop-off control)

### Approval Turnaround Time

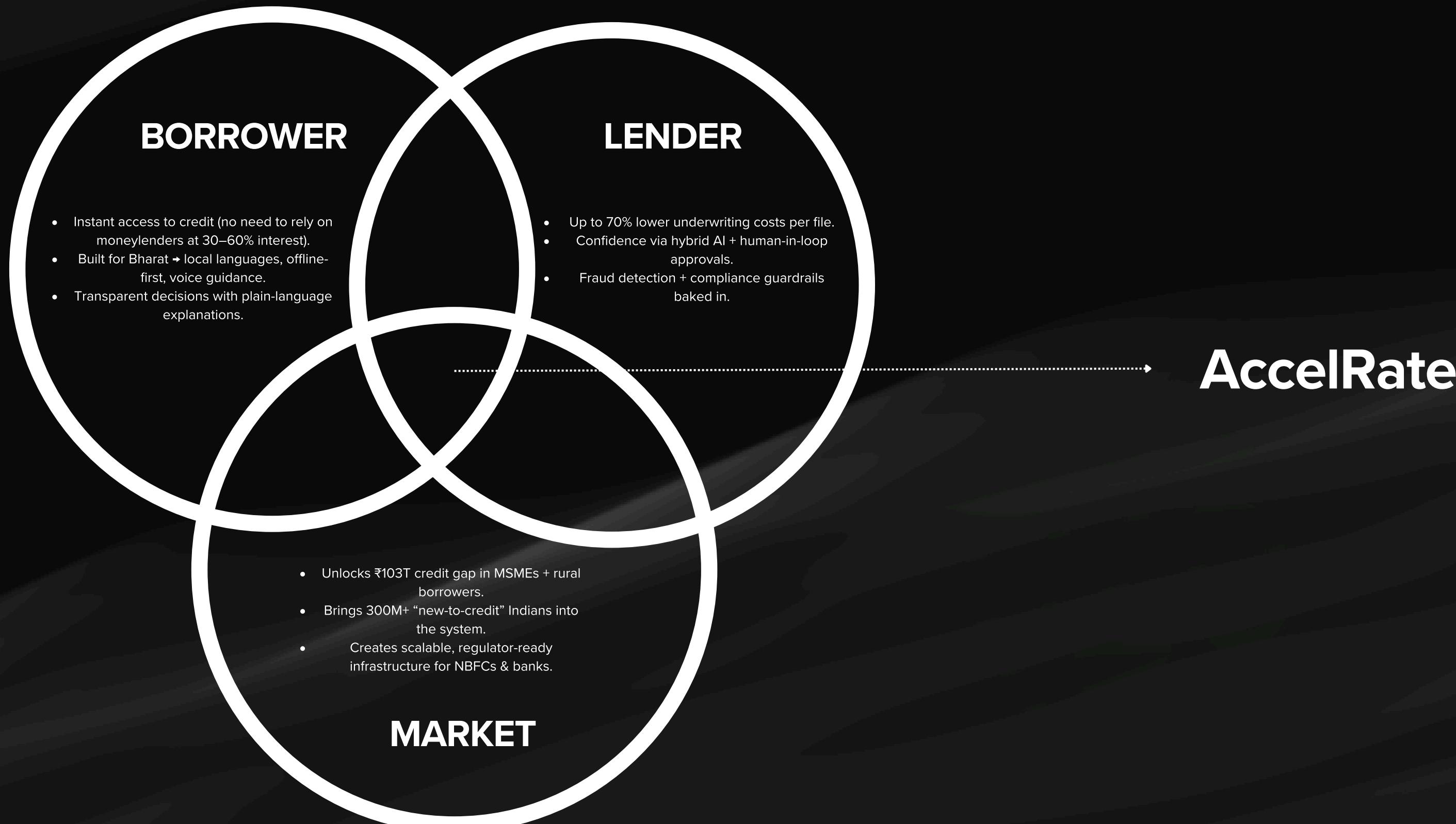
→ Avg. time from application → disbursement (<24 hrs for AI loans)  
(Core promise of speed — huge contrast to current 3–4 weeks)

### Underwriting Cost Reduction

→ % savings vs manual underwriting (~70% lower)  
(Critical for lenders to adopt and scale this product)

# Impact: Why AccelRate Wins for Bharat

*Driving inclusion, trust, and scale in rural & semi-urban lending*



*AccelRate → AI-driven credit access that is inclusive, transparent, and Bharat-ready*