

Personalised Learning Engine

Strategic Product Initiative | India EdTech

EXECUTIVE SUMMARY

The Opportunity: India's 350M+ digital learners face a discovery crisis. Wrong courses → Low completion → Churn.

Our Solution: AI-powered recommendation engine built for India's reality: vernacular, mobile-first, exam-aware, affordable.

Business Impact:

- 25% ↑ User Engagement
 - 30% ↑ Course Completion
 - 20% ↑ User Satisfaction (Tier 2/3)
 - ₹170Cr Year 1 Revenue Uplift
-

1 THE MARKET CONTEXT

India's EdTech Opportunity: A \$13B Market in Transformation

MARKET SIZE AT A GLANCE

India EdTech Market (2025)

| | |
|---|---|
| Total Addressable Market (TAM) | \$12.75B - \$13.2B |
| └ All digital learners: K-12, College, Jobs, Professionals, Exam Prep | |
| | |
| Serviceable Available Market (SAM) | \$6.0B - \$7.5B |
| └ Online/hybrid reachable via internet & mobile | |
| └ English/Hindi + major vernacular languages | |
| | |
| Serviceable Obtainable Market (SOM) | \$1.2B - \$2.8B |
| └ Currently captured by BYJU'S, Unacademy, upGrad, others | |
| Growth Trajectory: | 2025: \$13.0B → 2030: \$29.6B (CAGR: 23.4%) |

Our Opportunity: Capture 5% by 2027 = **\$1.5B** from underserved Tier 2/3 segments

SEGMENT TAM BREAKDOWN

Who Makes Up the \$13B Market?

| Segment | TAM (2025) | Share | Key Characteristics |
|-------------------------|-----------------|-------|---|
| 🎓 K-12 Students | \$4.6B - \$5.0B | 38% | Largest segment; strong digital adoption; parent-driven spend |
| 🎒 Higher Education | \$2.1B - \$2.3B | 17% | Online degrees, upskilling, hybrid education models |
| 📝 Test Prep / Exams | \$2.0B - \$2.1B | 16% | Competitive/government exams (JEE, NEET, UPSC, Banking) |
| 💻 Working Professionals | \$1.8B - \$2.0B | 15% | Reskilling, career development, certifications |
| 👶 Preschool & Others | \$0.7B - \$1.0B | 8% | Digital pre-K, language learning, STEAM, coding |

Key Insight: K-12 dominates revenue (38%), but Working Professionals and Job Seekers represent the fastest-growing segments.

FROM TAM TO SAM: THE REALITY CHECK

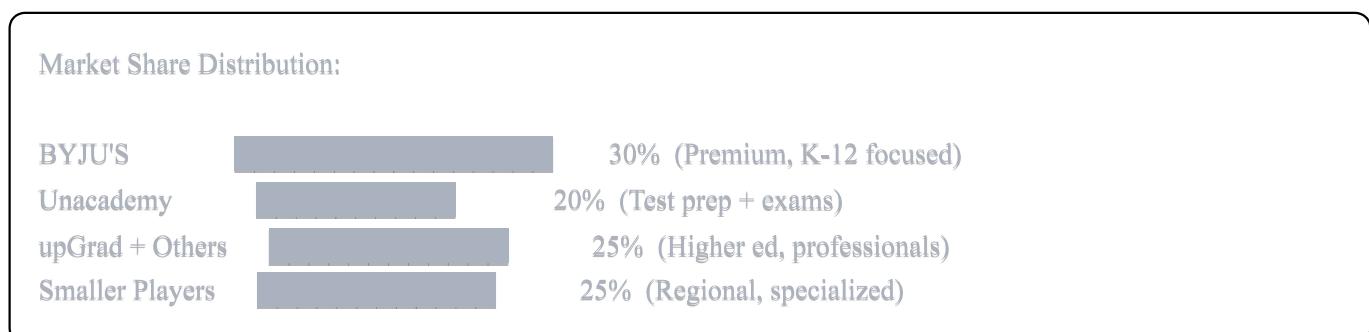
Why Only 27% of TAM is Truly Serviceable

| Segment | TAM | Digital Access | Language Fit | Willing to Pay | SAM |
|-----------------|--------|----------------|--------------|----------------|----------------|
| 🎓 K-12 | \$5.0B | 56% | 82% | 61% | \$1.40B |
| 🎒 Higher Ed | \$2.2B | 55% | 78% | 67% | \$630M |
| 📝 Test Prep | \$2.1B | 67% | 85% | 60% | \$720M |
| 💻 Professionals | \$2.0B | 53% | 90% | 52% | \$495M |
| 👶 Preschool | \$1.0B | 35% | 90% | 80% | \$252M |
| TOTAL | | | | | \$3.50B |

Bottom Line: Access, language, and affordability create massive barriers.

COMPETITIVE LANDSCAPE

Current Market Structure (2025)



White Space Opportunity:

BYJU'S Unacademy PhysicsWallah Coursera

| | | | | |
|------------------|-----|-----|------|----|
| Vernacular Depth | ★★ | ★★ | ★★★ | ★ |
| Personalization | ★★★ | ★★★ | ★★ | ★★ |
| Affordability | ★ | ★★ | ★★★★ | ★★ |
| Offline-First | ★★★ | ★★ | ★★★★ | ★★ |

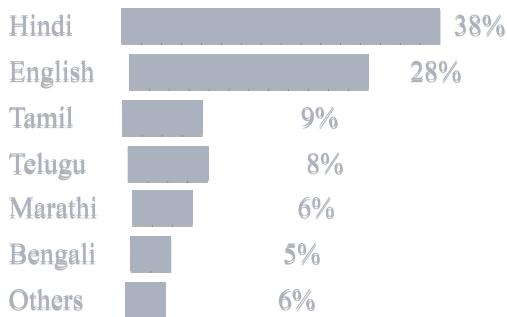
The Gap: No player owns all three: **Vernacular + AI Personalization + Affordability**

LEARNER BEHAVIOR INSIGHTS

| Metric | Data | Strategic Implication |
|----------------|--------------------------------|-----------------------------|
| Content Format | 72% video, 18% notes, 10% live | Video-first nation |
| Device Usage | 68% budget Android (<₹10K) | Must work on 2GB RAM, 3G |
| Daily Learning | 45-60 min average | Bite-sized content critical |
| Exam Season | 3x traffic spike Jan-May | Auto-scale infrastructure |

Regional Language Demand:

Language Preference:



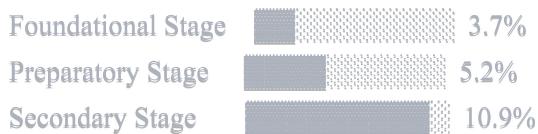
Critical: 72% prefer non-English interface

98% of Tier 2/3 demand native language UI

THE DROPOUT CRISIS

Why 96.9% of Learners Never Complete Courses

Dropout Rates by Stage:



Industry Average Completion: 3.1%

Primary Dropout Drivers:

| Cause | % | What It Means |
|------------------------------|-----|--------------------------|
| Data Cost / Connectivity | 38% | Offline mode essential |
| Boredom / Lack of Engagement | 30% | Generic content fails |
| Lack of Personalization | 25% | Wrong difficulty = churn |

Critical Insight: Discovery mismatch is #1 churn driver, not content quality.

MARKET CONTEXT SUMMARY

Five Critical Insights:

1. **Market Size:** \$13B TAM → \$30B by 2030 (23% CAGR)
 2. **Underserved Segment:** 65% users in Tier 2/3 with 72% vernacular demand
 3. **Completion Crisis:** 3.1% rate driven by discovery mismatch
 4. **Price Sensitivity:** 85% ceiling at ₹2K/course
 5. **Competitive Gap:** No player owns vernacular + personalization + affordability
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2 USER PERSONAS & STORIES

Understanding Our Learners: India-Specific Contexts

PERSONA OVERVIEW

| Persona | Primary Context | Core Motivation | Affordability | Digital Fluency |
|-----------------------------|--------------------------|---|----------------------|-----------------|
| Tier 2 Student | Class 11-12, exam prep | Quality education without ₹80K coaching | Low (₹500-1500) | Medium |
| Job Seeker | Graduate, unemployed | Skill-to-job pathway clarity | Very Low (₹500-1000) | Low-Medium |
| Working Professional | 3-7 years experience | Career growth, salary increment | Medium (₹2K-5K) | High |
| Exam Aspirant | UPSC/Banking/SSC focused | Weak area identification | Medium (₹2K-3K) | Medium-High |
| Regional Learner | Non-English speaker | Confidence in native language | Very Low (Free-₹500) | Low |
| Instructor | Content creator | Improve quality, increase earnings | N/A | High |
| Platform Admin | Data analyst | Optimize recommendation performance | N/A | Expert |

DETAILED USER STORIES BY PERSONA

LEARNERS

Story 1: The Tier 2 NEET Aspirant

*As a 11th-grade student from Jaipur using a ₹8,000 smartphone,
I want the app to recommend NEET Biology videos in Hinglish based on my mock test weak areas,
So that I can improve my score without buying expensive test series subscriptions.*

Context:

- Device: Budget Android (2GB RAM, 16GB storage)
- Connectivity: 3G, 2GB data/month
- Study time: 2-3 hours daily (evening)
- Budget: ₹500-1000 total
- Language: Hinglish

Success Criteria:

- Mock test: 420 → 520+ (NEET Biology)
- Completion rate: >60%
- Daily engagement: 30+ minutes

Story 2: The Failed Placement Graduate

*As a B.Tech graduate who failed campus placements,
I want personalized career pathways showing "6 months to Full Stack Developer" with ₹20K total cost,
So that I can convince my parents to invest in upskilling.*

Context:

- Age: 22, Tier 2 city (Lucknow)
- Background: Non-CS branch
- Pressure: Parents want government job
- Timeline: 6 months to job offer

Success Criteria:

- Clear roadmap: Frontend → Backend → Portfolio
- Cost transparency: ₹20K total
- Job placement support

Story 3: The Time-Starved Professional

*As a marketing manager juggling 50-hour work weeks,
I want 15-minute daily learning nudges on WhatsApp,
So that I can learn without opening another app.*

Context:

- Age: 28, Pune startup
- Work hours: 9 AM - 9 PM
- Learning window: 10-15 min daily
- Device: iPhone

Success Criteria:

- Micro-learning: 10-15 min modules
- WhatsApp delivery
- Weekend deep-dive option

Story 4: The Repeat Exam Failure

*As a banking exam aspirant from Patna who failed SSC CGL twice,
I want the system to recommend only quant topics I scored <40% in,
So that I focus limited study hours on gaps.*

Context:

- Age: 25, full-time preparation
- Previous attempts: Failed twice
- Weak areas: Quantitative Aptitude
- Study hours: 8 hours/day

Success Criteria:

- Auto-detect weak topics
- Focused recommendations
- Progress tracking

Story 5: The Vernacular Skill Builder

*As a Marathi-speaking teacher wanting to learn Python,
I want code explanations in Marathi with English syntax,
So that I can teach coding to my students.*

Context:

- Age: 35, school teacher
- English: Basic reading
- Motivation: Teach coding (NEP 2020)
- Learning pace: Slow

Success Criteria:

- Marathi interface: 100%
- Code comments: Marathi explanations
- Confidence: Teach first class in 3 months

INSTRUCTORS

Story 1: The Quality-Obsessed Creator

*As a course instructor with 5,000 students,
I want to see which chapters have 60%+ drop-off,
So that I can re-record confusing sections.*

Story 2: The Vernacular Content Entrepreneur

*As a freelance educator creating vernacular content,
I want recommendations on trending skills in Tier 3 cities,
So that I can create high-demand courses.*

PLATFORM ADMINS

Story 1: The Data-Driven Optimizer

*As a data analyst at the platform,
I want dashboards showing recommendation accuracy by state/language/device,
So that I can identify underserved segments.*

KEY TAKEAWAYS

1. **Language is Make-or-Break:** 72% prefer Hinglish/vernacular
2. **Affordability Drives Decision:** ₹2,000 ceiling for 85%
3. **Context Matters:** Same course ≠ right for all personas
4. **Time Constraints Vary:** Students 2-3 hrs | Professionals 15 min
5. **Trust Requires Proof:** Job seekers need success stories
6. **Device/Data Constraints:** 68% budget Android
7. **Motivations Differ:** Students: Scores | Job seekers: Offers | Pros: Promotions

3 FUNCTIONAL REQUIREMENTS

Feature Specifications Matrix

| Feature | User Type | Description | Priority | India-Specific Notes | Complexity |
|--|----------------|--|-------------|--|------------|
| Multi-Language UI | All Learners | 9 languages: Hindi, Tamil, Telugu, Marathi, Bengali, Gujarati, Kannada, Malayalam, English | ★★★ High | 72% Tier 2/3 prefer native UI | High |
| Career Goal Mapper | Learners | "What job?" → Skills → Course sequence + cost | ★★★ High | Show salary benchmarks (₹3L, ₹5L, ₹10L+) | Medium |
| Exam-Centric Pathways | Students | Auto-detect exam (JEE/NEET/UPSC) → Topic courses | ★★★ High | 40% users are exam prep | High |
| Adaptive Level Detection | All Learners | Post-onboarding quiz → Tag Beginner/Intermediate/Advanced | ★★★ High | 65% abandon if too hard | Medium |
| Micro-Learning Nudges | Professionals | Daily WhatsApp/SMS with 10-min lesson | ● Medium | WhatsApp: 550M users in India | Medium |
| Offline Content Recommendations | Learners | Suggest downloadable courses for <2 Mbps users | ★★★ High | 45% Tier 3 have <5GB data/month | High |
| Collaborative Filtering | All Users | "Users like you learned X" (behavior clustering) | ★★★ High | Cold-start: popular in user's state | High |
| Budget-Based Filtering | Learners | Filter: Free, <₹500, ₹500-2000, ₹2000+ | ● Medium | 85% won't pay >₹2K | Low |
| Content Gap Dashboard | Instructors | Trending skills, regional preferences | ● Low | Improve supply side | Medium |
| A/B Testing Framework | Admins | Experiment on algorithms, UI, notifications | ★★★ High | Test regional variations | High |
| Progress-Based Recommendations | Learners | After Course A → Suggest Course B (skill tree) | ● Medium | Increase LTV | Medium |
| Weak Area Deep-Dive | Exam Aspirants | Test performance → Targeted courses | ★★★ High | Personalization = moat | High |

Legend:

- High: Must-have for MVP
- Medium: Post-MVP
- Low: Future roadmap

4 NON-FUNCTIONAL REQUIREMENTS

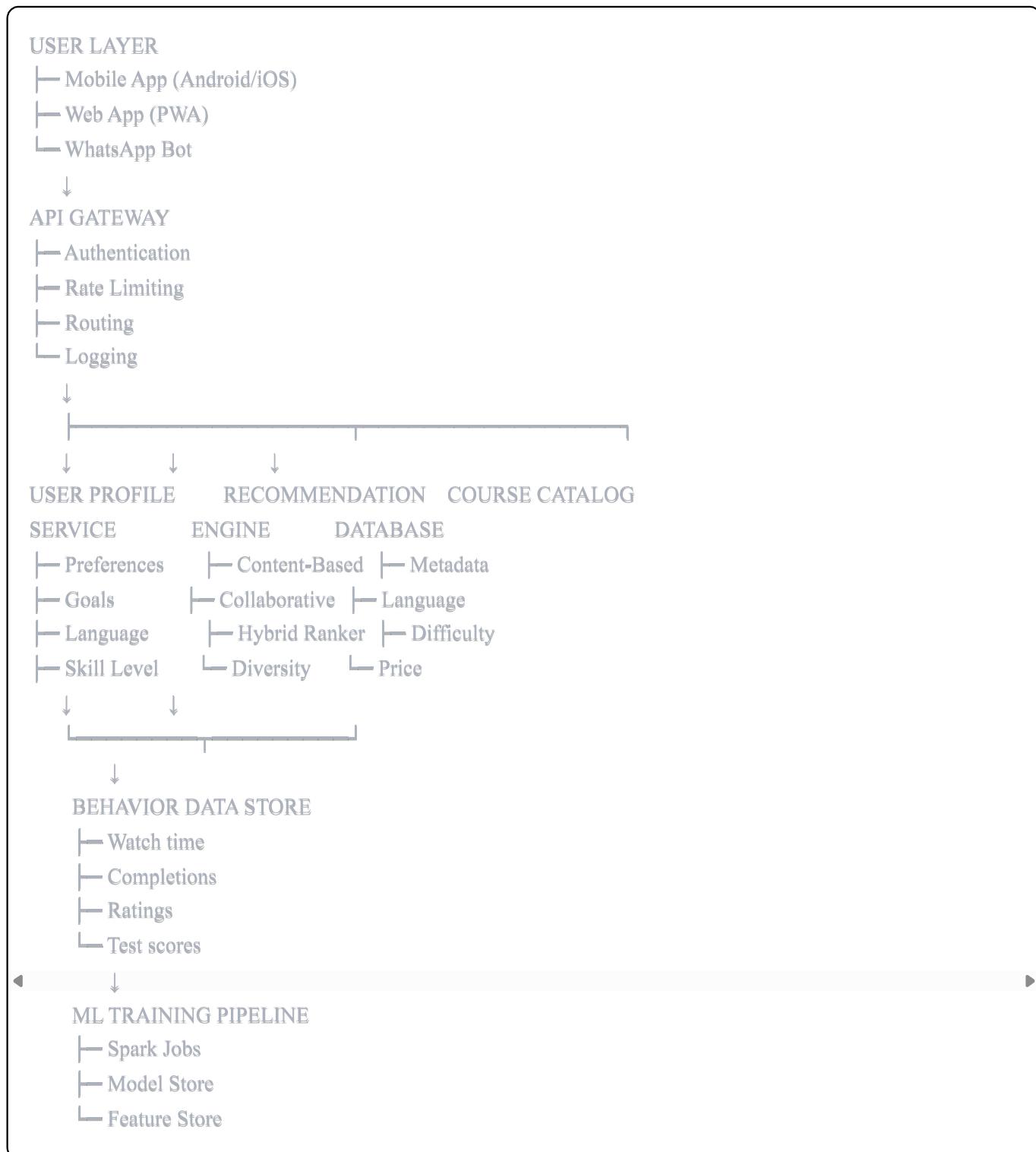
Quality Attributes Framework

| Category | Requirement | Specification | India Context Rationale |
|----------------|----------------------|---|--|
| Performance | Page Load Time | <2 seconds on 3G | 60% on 3G/4G; slow load = 40% bounce |
| Performance | API Response | <500ms (p95) | Mobile-first; latency kills engagement |
| Scalability | Concurrent Users | 500K during exam spikes | Jan-May: 3x traffic |
| Scalability | Horizontal Scaling | Microservices, add nodes without downtime | Peak loads unpredictable |
| Availability | Uptime SLA | 99.5% (~3.6 hrs downtime/month) | Critical during exams |
| Availability | Graceful Degradation | Rule-based if ML fails | Fallback: "Popular in Your City" |
| Compliance | DPDP Act 2023 | Explicit consent, 30-day deletion | Heavy penalties for non-compliance |
| Compliance | Minor Protection | Parental consent for <18 | 35% user base is 13-18 |
| Security | Data Encryption | AES-256 (rest), TLS 1.3 (transit) | Protect PII |
| Security | PII Anonymization | Hash user IDs in analytics | Minimize breach impact |
| Data Retention | Behavior Data | 18 months, then purge | Balance ML training vs privacy |
| Data Retention | Test Scores | 3 years or until deletion request | Historical tracking |
| Monitoring | Real-time Dashboards | CTR, diversity, error rates by region | Detect anomalies |
| Monitoring | ML Model Drift | Weekly accuracy checks, retrain if <5% drop | Behavior shifts |
| Logging | Audit Trails | All recommendations with timestamps | Debug bias |
| Extensibility | Plugin Architecture | Add new algorithms without refactor | GPT-based experiments |

| Category | Requirement | Specification | India Context Rationale |
|---------------|-------------------------|-----------------------------|-------------------------|
| Extensibility | Third-party Integration | APIs for external platforms | Expand catalog |

5 CORE SYSTEM DESIGN

High-Level Architecture



Recommendation Engine Workflow

STEP 1: User Opens App



STEP 2: API Gateway → Authenticate → Fetch Profile

- └─ User ID, Language, Career Goal
- └─ Skill Level, Budget
- └─ Last Activity
- └─ Device Type



STEP 3: Recommendation Engine

- └─ Context Enrichment (Time, Location, Exam Calendar)
- └─ Candidate Generation (180 courses)
 - Content-Based: 50
 - Collaborative: 80
 - Trending: 30
 - Diversity: 20
- └─ Ranking & Scoring
 - Score = $0.4 \times \text{Collaborative} + 0.3 \times \text{Content}$
 - + $0.2 \times \text{Trending} + 0.1 \times \text{Instructor}$
- └─ Apply: Budget, Language, Offline filters
- └─ Top 20 Courses



STEP 4: Carousel Assembly

- └─ "Continue Learning"
- └─ "For Your Goals"
- └─ "Trending in [City]"
- └─ "New in [Language]"



STEP 5: Render in UI (1.8s total latency)



STEP 6: Log Interaction → Update embedding

Data Collection Pipeline

USER ACTIONS

- └─ Video Play/Pause
- └─ Course Purchase
- └─ Search Query
- └─ Test Submission
- └─ Profile Update



EVENT STREAM (Kafka)

- └─ Real-time → Instant nudges
- └─ Batch → Daily ML retraining



6 TRADE-OFF ANALYSIS

Decision 1: Personalization Depth vs Mobile Performance

The Dilemma: 60% users on budget Android (<₹10K), 2GB RAM, 3G

| Option | Approach | Pros | Cons | Decision |
|-------------------------|--|---|--|--------------------|
| A: Deep ML On-Device | Run ML locally, full history | Ultra-personalized, Works offline, Instant | 50MB app, Drains battery, Crashes | ✗ |
| B: Server- Only | All ML on server, last 50 interactions | Fast load, Easy updates, Low memory | Requires internet, Higher latency, ₹1.2Cr/yr | ✗ |
| C: Hybrid | Server for new users, Cache top 50, On-device offline | Balanced, Works offline, Cost-effective | Complex build, Sync logic | ✓ WINNER |

Rationale:

- 60% can't afford 50MB app bloat
- Tier 2/3 need offline fallback
- Cost: Hybrid = ₹1.9Cr vs ₹2.3Cr (on-device) vs ₹2Cr (server)

Implementation:

1. New users (0-10): Rule-based
2. Active (10-100): Server-side collaborative
3. Power (100+): Hybrid cached
4. Offline: Last 20 cached recommendations

Decision 2: Privacy vs Recommendation Accuracy

The Tension: DPDP Act 2023 + Privacy-aware users

| Data Level | Accuracy | Trust | Risk | Choice |
|------------|----------|-------|--------------------|---|
| Minimal | 65% | High | Zero | X Misses KPIs |
| Deep | 85% | Low | High (₹250Cr fine) | X Too risky |
| Balanced | 78% | High | Low | ✓ WINNER |

Our Data Policy:

✓ WE COLLECT:

- └ Aggregate watch time
- └ Completions & ratings
- └ Anonymized test scores
- └ City-level location
- └ Language & career goals

✗ WE DON'T COLLECT:

- └ Exact video timestamps
- └ Keystroke patterns
- └ Contact lists
- └ GPS location
- └ Cross-app behavior

RETENTION: 18 months → Auto-purge

CONSENT: Clear, granular, revocable

Impact: 78% accuracy achieves 30% completion target with user trust.

Decision 3: Language Expansion Strategy

The Challenge: 9 languages = 750M users, but translation ≠ localization

| Strategy | Coverage | Time | Content | Revenue Y1 |
|------------------|----------|-------|---------|--|
| Big Bang (All 9) | 100% | 10 mo | 20% | ₹200Cr delayed |
| Hindi Only | 38% | 3 mo | 60% | ₹120Cr |
| Phased Rollout | 70%→85% | 9 mo | 45% | ₹165Cr ✓ |

Rollout Plan:

Q1: Hindi + English (70% coverage, 50K courses)

Q2: + Tamil, Telugu, Marathi (85% coverage)

Q3: + Bengali, Gujarati (92% coverage)

Q4: + Kannada, Malayalam (96% coverage)

Rationale: Capture majority TAM quickly while building supply.

ASSUMPTIONS & FUTURE PLANNING

Key Assumptions (India Context)

| Category | Assumption | Risk | Mitigation |
|----------------------|--|----------|---|
| User Behavior | 70% use mobile apps as primary channel; prefer 10-20 min content | ● Low | Mobile-first; micro-learning modules |
| Connectivity | 50-60% Tier 2/3 on <5GB/month, 3G/4G intermittent | ● Medium | Offline-first; low-bitrate; test in Patna, Indore |
| Language | 70% prefer vernacular UI, tolerate English for technical | ● Low | Multi-language UI early; transliteration |
| Pricing | Most expect <₹2,000; freemium foundational | ● Low | Affordable tiers; EMI; bundles |
| Exam Seasonality | 3x traffic Jan-May; spikes Oct-Dec | ● Low | Auto-scaling; pre-warm caches |
| Content Supply | 60% English initially; vernacular lags 12-18 mo | ● Medium | Creator accelerator; auto-translation |
| Device Fragmentation | >200 Android models, 2GB RAM, old OS | ● High | Graceful degradation; extensive testing; 50MB max |
| WhatsApp Adoption | 80% adoption in Tier 2/3 | ● Medium | A/B test; opt-out; ≤3 nudges/week |
| DPDP Compliance | Users expect transparency; consent fatigue risk | ● High | Coarse location; anonymization; privacy dashboard |
| Competition | BYJU'S, Unacademy, PW will adopt personalization | ● Medium | Differentiate on Tier 2/3 UX; ultra-light mobile |
| AI Adoption | Users trust AI if transparency exists | ● Medium | Explainability; user preference editing |
| Offline Mode | 30-40% rely on offline/downloadable | ● Low | Auto-download; offline quizzes; low-data pages |

Risk Legend: ● Low | ● Medium | ● High

Future Planning (2027-2030 Vision)

PHASE 1: NEAR-TERM (6-12 Months)

1. AI Teaching Assistant (Region-Aware)

Vision: GPT-4 vernacular doubt-solver, India-specific exam patterns

Features:

- 9 regional languages support
- Hinglish queries ("Yeh concept samajh nahi aaya")
- State exam syllabus (CBSE, State Boards, JEE, NEET, UPSC)
- Voice input for low-literacy users
- 24/7 availability

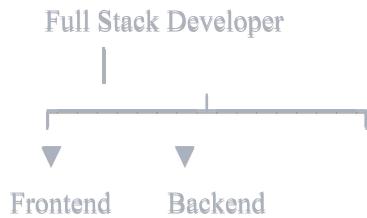
Impact: 40% doubt resolution without instructors

| Before | After |
|-----------------|-------------------------|
| Wait 2-4 hours | Instant response |
| Generic YouTube | Syllabus-aware |
| English barrier | Vernacular explanations |

2. Skill Graph Expansion

Vision: Dynamic skill dependency mapping for emerging jobs

Skill Graph:



Job Role Mapping:

| Job Role | Skills | Salary (India) | Bundle Price |
|-------------------|------------------------|----------------|--------------|
| Digital Marketing | SEO, Ads, Analytics | ₹3-5L/year | ₹2,999 |
| Full Stack Dev | React, Node, SQL | ₹5-8L/year | ₹4,999 |
| Data Analyst | Excel, Python, Tableau | ₹4-6L/year | ₹3,499 |

3. Predictive Dropout Prevention

Vision: Proactive intervention before churn

Risk Indicators:

● High Risk:

- └ 3+ days inactive
- └ <20% video completion
- └ Multiple starts, zero completions
- └ Declining test scores

● Medium Risk:

- └ Decreasing session duration
- └ 40-60% completion
- └ Weekend learning dropped

● Low Risk:

- └ Steady but slow progress
- └ Occasional missed days

Interventions:

| Risk | Action | Personalization |
|----------|--|-------------------------------|
| ● High | WhatsApp: "Where you left off"; Free doubt session | Last activity, language, time |
| ● Medium | Push: "5 min today?"; Bite-sized recap | Motivational tone |
| ● Low | Weekly email; "Top 30% of learners" | Positive reinforcement |

Impact: Reduce dropout 15-20%; completion 3.1% → 8-10%

PHASE 2: MID-TERM (12-24 Months)

4. Creator Economy Ecosystem

Vision: Empower 10,000+ vernacular educators

Creator Support:

- └ AI Scriptwriting (Telugu idea → script)
- └ Auto-Translation (English → Hindi + Tamil voiceover)
- └ Revenue Share: 70% (vs industry 50%)
- └ Regional Bonus: +10% for Tier 3 creators
- └ Seed Funding: ₹50K for high-potential

Target: 5,000 vernacular courses, ₹50Cr creator payouts

5. Offline-First AI

Vision: Recommendations work without internet

On-Device (50MB):

- └ User profile embedding
- └ Top 50 recommended courses
- └ Last 30 days history
- └ Lightweight ML model

Sync Strategy:

- └ WiFi → Full sync
- └ 4G/3G → Lightweight
- └ Offline → Cached (7 days old)

6. Hyper-Personalized Exam Prep

Vision: AI-powered weak area targeting

Dynamic Mock Test:

INPUT: JEE Mock 1

- └ Physics: 40%
- └ Chemistry: 65%
- └ Maths: 55%

OUTPUT: Custom Test

- └ 60% weak topics
- └ 30% mixed difficulty
- └ 10% new topics

Weak Area Loop:

Step 1: Take Mock Test

Step 2: AI identifies weak topics (<50%)

Step 3: Recommend 3-5 targeted videos

Step 4: Practice questions (10-15 MCQs)

Step 5: Mini-test (5 questions)

Step 6: If >70% → "Improved" | If <70% → Conceptual videos

Step 7: Repeat until mastery (3 consecutive 70%+ scores)

Daily Study Plan Generator:

| Time | Activity | Duration | Focus |
|----------------|-------------------------|----------|------------|
| 6:00-7:00 AM | Physics: Electrostatics | 45 min | Weak (35%) |
| 7:00-7:15 AM | Revision quiz | 15 min | - |
| 8:00-9:30 PM | Chemistry: Organic | 60 min | Weak (42%) |
| 9:30-10:00 PM | Maths practice | 30 min | Moderate |
| 10:00-10:15 PM | Progress review | 15 min | - |

Past-Year Question Trend Analysis:

JEE 2020-2024 Analysis:

Topic: Electrostatics

- └ Appear in 5/5 years
- └ Average difficulty: Hard
- └ Weightage: 8-10% of Physics paper
- └ Common sub-topics:
 - └ Gauss's Law (100% frequency)
 - └ Capacitors (80%)
 - └ Electric Field (60%)
- └ Recommendation: HIGH PRIORITY ★★★

Action: "Study Gauss's Law first → 5 video lessons available"

7. WhatsApp Micro-Courses

Vision: Entire courses via WhatsApp (30-50 micro-lessons)

Example: "Excel for Beginners" (10-Day WhatsApp Course)

Day 1: Introduction (5 min video link)

- └ Quiz: 3 MCQs (reply A/B/C)

Day 2: Formulas Basics (7 min)

- └ Assignment: "Calculate monthly expenses"

...

Day 10: Final Project

- └ Certificate on completion

Engagement Metrics:

| Metric | Traditional App | WhatsApp Micro-Course |
|--------------------|-----------------|-----------------------|
| Completion Rate | 3.1% | 22% (7x higher) |
| Daily Active Users | 15% | 58% |
| Dropout Day | Day 3 | Day 7 |

Why WhatsApp Works:

- Zero install friction
 - Works on 2G/3G
 - 550M users familiar
 - Low data consumption
-

PHASE 3: LONG-TERM (24-36 Months)

8. Regional Community & Peer Groups

Vision: City-wise study cohorts

Community Structure:

- Patna UPSC Aspirants (2,400 members)
 - Daily current affairs (7 AM)
 - Mock interviews (weekends)
 - Study plan sharing

- Kota JEE Preparation (5,600 members)
 - Doubt-solving threads
 - Motivational check-ins
 - Rank prediction contests

- Bangalore Full Stack Learners (3,200 members)
 - Project collaboration
 - Job referral network
 - Tech meetups (monthly)

Features:

- Live study rooms (text + voice)
- Peer accountability partners
- Leaderboards (city-wise, course-wise)
- Local offline meetups

Impact:

- 35% increase in completion (peer pressure)
 - 50% increase in daily active users
 - Viral growth through community referrals
-

9. Integrated Career & Job Pathways

Vision: End-to-end learning-to-employment

"6 Months to Full Stack Developer"

MONTH 1-2: Frontend Foundations

- |— HTML/CSS Basics (20 hours)
- |— JavaScript Fundamentals (30 hours)
- |— React Introduction (25 hours)
- |— Project 1: Personal Portfolio Website

MONTH 3-4: Backend & Databases

- |— Node.js & Express (30 hours)
- |— MongoDB Basics (15 hours)
- |— RESTful API Design (20 hours)
- |— Project 2: Blog Application with Admin Panel

MONTH 5: Integration & Deployment

- |— Full Stack Integration (25 hours)
- |— Git & GitHub (10 hours)
- |— Deployment (Heroku, Netlify) (10 hours)
- |— Project 3: E-commerce Website (Capstone)

MONTH 6: Job Preparation

- |— Resume Building Workshop
- |— Mock Interviews (3 sessions)
- |— Portfolio Review & Feedback
- |— Access to Partner Hiring Network

TOTAL COST: ₹4,999 (vs ₹50K bootcamps)

JOB GUARANTEE: 90% placement in 3 months post-completion

Auto-Generated Portfolio Projects:

| Project | Technologies | Hiring Appeal |
|--------------------|----------------------|--------------------------------|
| E-commerce Site | React, Node, MongoDB | High (end-to-end skills) |
| Social Media Clone | React, Firebase | High (real-world app) |
| Admin Dashboard | React, D3.js, APIs | Medium-High (business context) |

Partner Hiring Network:

- 500+ companies (startups, SMEs, corporates)
- Direct job board access post-completion
- Referral bonus: ₹10,000 per successful placement

10. B2B2C Integrations

Vision: White-label learning for institutions

CAMPUS-WIDE PERSONALIZED LEARNING

| STUDENT FEATURES |
|---|
| — Semester-aligned course recommendations |
| — Professor-assigned learning paths |
| — Peer study groups (class-wise, department-wise) |
| — Campus placement prep tracks |
| TEACHER DASHBOARD |
| — Class progress analytics |
| — Individual student reports |
| — Custom assignment creation |
| — Doubt resolution tracking |
| — Curriculum gap identification |
| ADMIN ANALYTICS |
| — Department-wise learning trends |
| — Placement readiness scores |
| — Course demand forecasting |
| — Budget optimization insights |

Pricing Models:

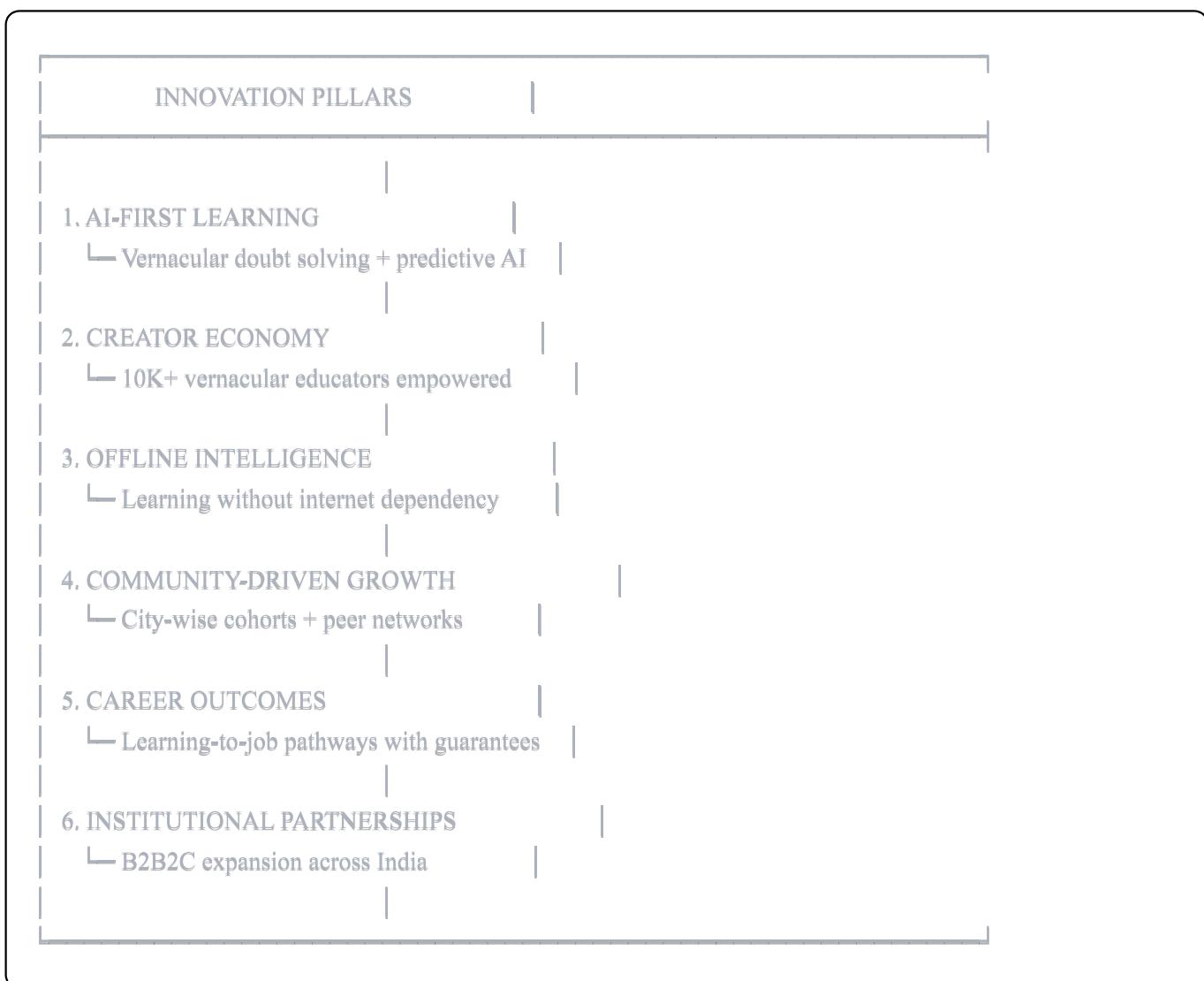
| Institution Type | Pricing | Features |
|--------------------|---------------------|---|
| Schools (K-12) | ₹50/student/year | Basic courses, teacher dashboard, parent reports |
| Colleges (UG/PG) | ₹200/student/year | Full catalog, placement prep, analytics |
| Skill Centers | ₹100/learner/course | Job-focused tracks, certification, employer connect |
| Corporate Training | ₹500/employee/year | Custom paths, performance tracking, compliance |

Target Market:

- 1,000 colleges (500K students) by Year 3
- 500 schools (200K students)
- 200 skill centers (50K learners)
- **Projected B2B Revenue: ₹80Cr by Year 3**

Future Planning Summary

Strategic Pillars for 2027-2030:



Expected Cumulative Impact (2027-2030):

| Metric | 2026 (Baseline) | 2030 (Vision) | Growth |
|------------------------|-----------------|---------------|----------------|
| Total Users | 10M | 50M | 5x |
| Course Completion Rate | 3.1% → 8% | 18% | 6x improvement |
| Vernacular Content | 22% | 65% | 3x |
| Tier 2/3 Market Share | 5% | 25% | 5x |
| Annual Revenue | ₹620Cr | ₹2,800Cr | 4.5x |
| Creator Earnings | ₹10Cr | ₹200Cr | 20x |

APPENDIX

Glossary

| Term | Definition |
|-----------------|---|
| Tier 2/3 Cities | Non-metros: Indore, Patna, Coimbatore (1-5M population) |
| Hinglish | Hindi-English code-mixed language ("Yeh function kya karta hai?") |
| DPDP Act | Digital Personal Data Protection Act 2023 (India's privacy law) |
| Cold Start | Recommending to new users with no interaction history |
| CTR | Click-Through Rate: (Clicks / Impressions) × 100 |
| NPS | Net Promoter Score: User satisfaction metric (-100 to +100) |
| ALS | Alternating Least Squares (collaborative filtering algorithm) |
| p95 Latency | 95th percentile response time (95% requests faster) |
| MAU | Monthly Active Users |
| LTV | Lifetime Value: Total revenue per user over lifetime |
| TAM | Total Addressable Market |
| SAM | Serviceable Available Market |
| SOM | Serviceable Obtainable Market |

Document Metadata

Title: Personalised Learning Engine | Strategic PRD

Version: 4.0 (Final - Correct Structure)

Date: November 18, 2025

Owner: Product Management (Core Team)

Status:  READY FOR REVIEW

Document Structure:

1. Executive Summary
2. Market Context (India 2025 data)
3. User Personas & Stories (7 personas detailed)
4. Functional Requirements (12 features)
5. Non-Functional Requirements (17 attributes)
6. Core System Design (architecture + workflows)
7. Trade-Off Analysis (3 critical decisions)
8. Assumptions & Future Planning (12 assumptions + 10 initiatives)
9. Appendix (Glossary + Metadata)

Approvers:

- CPO (Product Strategy) []
- CTO (Technical Feasibility) []
- CFO (Budget Allocation) []
- CMO (GTM Strategy) []
- Legal (Compliance Review) []

Contact: product-reco@company.in

Review Cycle: Bi-weekly during development; Monthly post-launch

Next Review: December 1, 2025

END OF DOCUMENT

This document represents a strategic product initiative designed to transform India's EdTech landscape. Built with precision for Bharat's next 300 million learners.