



# DEVELOPER PRD — CONNECTOK

Stack: React (Web), React Native (Mobile), Figma (Design), Node.js (Backend), MongoDB, AWS (ECS/Fargate, Lambda, S3, CloudFront), GitHub Actions, Docker

Target: Local pilot → national → regional expansion

Goal: Fully functional, secure, scalable, AI-assisted B2B marketplace connecting suppliers and institutional buyers.

Success metrics include high transaction reliability (>99.9% uptime), escrow management, dispute handling (<2% disputes), and pilot adoption metrics (200 suppliers, 50 buyers).

## 1. EXECUTIVE SUMMARY

Build a secure, scalable B2B marketplace connecting suppliers to institutional buyers. Payments integrate local and international rails with escrow. The AI “vibe coding” layer automates DevOps, testing, scaling, patching, and optimization under human governance.

## 2. CORE FEATURES

Below is the complete feature set, with development roadmap/pipelines for each:

### 2.1 USER AUTHENTICATION & IDENTITY MANAGEMENT

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#### FEATURES:

- Multi-role accounts (Supplier, Buyer, Logistics, Admin)
- Signup/login via email/phone
- 2FA (SMS/TOTP)
- KYC tiered verification for suppliers & buyers

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#### ROADMAP:

1. Sprint 0-1: Infrastructure setup (DB, Auth service), JWT auth, front-end login/signup forms.
2. Sprint 2: KYC form creation, document upload, encryption, admin review panel.
3. Sprint 3: 2FA implementation, session management, brute-force detection.

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#### CONSIDERATIONS:

- Data privacy & DPA compliance
- Secure PII storage and encryption
- Rate-limiting & account lockouts

### 2.2 PRODUCT CATALOG & LISTINGS

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#### FEATURES:

- CRUD operations for supplier products
- Product images & quality metadata



- Stock management and bulk CSV upload
  - Auto-categorization & AI-based image validation
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#### ROADMAP:

1. Sprint 3: Build listing CRUD endpoints and UI, basic search filters.
  2. Sprint 4: Bulk CSV import & validation pipeline.
  3. Sprint 5: AI validation and auto-tagging integration.
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#### CONSIDERATIONS:

- Atomic stock updates to prevent overselling
- Optimistic locking for concurrent edits
- Scalability for growing product catalog

### 2.3 SEARCH & DISCOVERY

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#### FEATURES:

- Text & semantic search (vector embeddings for fuzzy queries)
  - Filters: price, distance, rating, availability
  - Caching popular queries
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#### ROADMAP:

1. Sprint 4: Basic text search in MongoDB
  2. Sprint 5: Semantic search with AI embeddings, vector search integration
  3. Sprint 6: Caching with Redis, optimize search response times
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#### CONSIDERATIONS:

- Scalability with OpenSearch or ElasticSearch
- Response latency targets (<300ms cached, <1s uncached)

### 2.4 REQUEST FOR QUOTATION (RFQ) & NEGOTIATION

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#### FEATURES:

- Buyers submit RFQs with quantity, specs, delivery requirements
  - Suppliers respond with quotes
  - Buyer selects quote to convert into order
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#### ROADMAP:

1. Sprint 5: RFQ submission endpoints and front-end forms
  2. Sprint 6: Quote submission, notifications, and analytics
  3. Sprint 7: Conversion to order pipeline, audit logging
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#### CONSIDERATIONS:



- Audit trail for compliance
- Notifications reliability (push/email/SMS)
- Handling expired or stale RFQs

## 2.5 ORDER LIFECYCLE & ESCROW MANAGEMENT

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### FEATURES:

- Full order lifecycle (Created → Payment → Escrow → Confirmed → In Transit → Delivered → Completed → Closed)
- Escrow-based payments with commission calculation
- Partial deliveries support

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### ROADMAP:

1. Sprint 5: Order creation with snapshot of product price & stock adjustment
2. Sprint 6: Escrow ledger integration and manual release for testing
3. Sprint 7: Full order fulfillment automation and notifications

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### CONSIDERATIONS:

- Payment provider integration reliability
- Reconciliation for partial deliveries and disputes
- Legal compliance for escrow handling

## 2.6 PAYMENTS & PROVIDER INTEGRATIONS

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### FEATURES:

- Local (EcoCash, OneMoney, ZIPIT) and international (Stripe, Flutterwave) rails
- Escrow capture & release
- Settlement & commission management

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### ROADMAP:

1. Sprint 5: Payment service sandbox integration
2. Sprint 6: Webhook handling and reconciliation
3. Sprint 7: Production integration, fallback providers, rate-limiting

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### CONSIDERATIONS:

- PCI DSS compliance for cards
- AML/CFT reporting obligations
- Handling failed or duplicate payments

## 2.7 LOGISTICS & DELIVERY

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### FEATURES:



- Courier API integration (booking, tracking)
- Route optimization, POD capture
- Driver tracking & ETA

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#### ROADMAP:

1. Sprint 6: Logistics booking & shipment tracking endpoints
2. Sprint 7: POD capture and delivery confirmation automation
3. Sprint 8: Optimization pipeline for routing and consolidation

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#### CONSIDERATIONS:

- Handling remote addresses & hub-based delivery
- Integration with multiple courier APIs
- Driver accountability & geo-validation

## 2.8 NOTIFICATIONS & REAL-TIME COMMUNICATION

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#### FEATURES:

- Push, email, SMS notifications for orders, payments, RFQs
- Real-time chat between buyers and suppliers

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#### ROADMAP:

1. Sprint 7: Notification service, basic push/email integration
2. Sprint 8: Real-time chat using WebSockets
3. Sprint 9: Notification preferences and throttling

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#### CONSIDERATIONS:

- Message delivery latency (<10s for critical notifications)
- Cross-channel consistency
- Security & encryption for chat

## 2.9 ADMIN & DISPUTE MANAGEMENT

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#### FEATURES:

- Admin panel for user management, KYC approvals, content moderation, dispute resolution
- Audit logs for all actions

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#### ROADMAP:

1. Sprint 8: Admin dashboards for basic actions
2. Sprint 9: Dispute handling workflows, resolution suggestions via AI
3. Sprint 10: Reporting dashboards & reconciliation tools

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#### CONSIDERATIONS:



- Compliance with local dispute handling regulations
- Immutable audit logs for accountability
- Integration with escrow and payment services

## 2.10 ANALYTICS & BUSINESS INTELLIGENCE

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### FEATURES:

- KPI tracking: GMV, order success rate, disputes
- Supplier performance scoring
- ML-driven forecasts (demand, pricing)

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### ROADMAP:

1. Sprint 9: ETL pipeline and dashboard integration
2. Sprint 10: Predictive analytics & AI-based insights
3. Sprint 11: KPI dashboard with near-real-time updates

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### CONSIDERATIONS:

- Data pipeline reliability (EventBridge, S3, Glue, Redshift)
- Historical trend analysis
- Data retention compliance

## 2.11 AI "VIBE CODING" AGENTS

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### FEATURES:

- BuildBot: Suggests code improvements
- TestBot: Auto-generates unit tests
- DeployBot: Automates deployments with safety checks
- PatchBot: Hotfixes trivial bugs
- ScaleBot: Autoscaling based on usage predictions
- InsightBot: Suggests UX/product changes
- GuardBot: Security & compliance monitor

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### ROADMAP:

1. Sprint 10: Sandbox environment for BuildBot & TestBot
2. Sprint 11: DeployBot canary deployment pipeline integration
3. Sprint 12+: Gradually roll out ScaleBot and PatchBot in production
4. Human oversight and safety policies defined upfront

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### CONSIDERATIONS:

- Clear audit trail and explainability
- Human-in-the-loop for production-impacting actions
- Model governance, versioning, and rollback procedures



## 2.12 SECURITY, PRIVACY & COMPLIANCE

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### FEATURES:

- Field-level encryption for sensitive data
  - WAF, CSP, rate limiting
  - Compliance with Zimbabwe DPA, AML/CFT, RBZ regulations, PCI DSS
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### ROADMAP:

1. Sprint 0–2: Security architecture, encryption, authentication
  2. Sprint 3–5: Secure document upload & storage, RBAC
  3. Sprint 6–7: Compliance validation, audit logging, monitoring
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### CONSIDERATIONS:

- Ensure regulatory compliance at all stages
- Regular penetration testing and monitoring
- Incident response plan

## 3. DEVELOPMENT PIPELINES & ROADMAP

### Sprint Pipeline Overview:

- Sprint length: 2 weeks
- Phases: Design → Development → Unit Testing → Integration Testing → QA → CI/CD → Sandbox Deploy → Staging → Production

### 3.1 CROSS-CUTTING PIPELINES

- CI/CD: GitHub Actions → Docker build → TestBot automated tests → BuildBot lint → DeployBot deploys to staging → Canary → Production
- AI Agent Integration: Sandbox → Staging → Production rollout with human supervision
- Data Pipeline: Event-driven ETL → S3 → Glue → Redshift/Athena → Dashboards
- Observability: Prometheus/Grafana for metrics, CloudWatch for logs, Alerting & Runbooks

### 3.2 MAINTENANCE & MONITORING

- Infrastructure Monitoring: AWS CloudWatch, Prometheus, Grafana dashboards
- Application Monitoring: Error tracking (Sentry), log aggregation, transaction tracing
- Database Health: MongoDB replica set monitoring, backups, automated failover
- AI Agents Monitoring: Human-in-the-loop supervision
- Security Monitoring: WAF, intrusion detection, vulnerability scans
- Incident Management: Runbooks and SOPs for downtime, transaction failures, security breaches

### 3.3 SCALABILITY & PERFORMANCE CONSIDERATIONS

- Horizontal scaling via AWS ECS/Fargate or Kubernetes
- Load balancing using AWS ALB/ELB
- CDN (CloudFront) for static assets
- Caching layers (Redis/Memcached) for frequently accessed data



- Queue systems (SQS, RabbitMQ) for asynchronous tasks
- Concurrency handling, latency optimization, regional deployment strategy

#### 3.4 LEGAL, COMPLIANCE & RISK MANAGEMENT

- GDPR/DPA-compliant user data storage
- AML/CFT checks for international payments
- Terms of Service & Privacy Policy enforcement
- Dispute handling workflows with audit trails
- Ongoing compliance monitoring and regulatory updates

#### 3.5 DEVOPS & AI VIBE CODING INTEGRATION

- Automated deployment pipelines using CI/CD
- AI-assisted code reviews, test generation, bug fixes
- Continuous performance monitoring and predictive maintenance
- Human-in-the-loop for production-critical operations
- Audit logs and model versioning

#### 3.6 ROADMAP SUMMARY

Phase   Duration   Key Focus
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Phase 0   Month 0   Infrastructure setup, design system (Figma), project planning
Phase 1   Month 1-3   MVP: Auth, KYC, product catalog, basic RFQ/order flow, sandbox payments
Phase 2   Month 4-6   Payments integration, escrow, logistics, notifications, admin panel
Phase 3   Month 6-9   AI coding agents in sandbox, search & analytics, full order lifecycle, dispute management
Phase 4   Month 9-12   Scaling, performance optimization, monitoring, pilot evaluation
Phase 5   Month 12+   Regional expansion, international payments, advanced AI assistance, predictive analytics

### 4. TECHNICAL CONSIDERATIONS

- Frontend: React + React Native, responsive design, Figma prototypes
- Backend: Node.js, REST + GraphQL API endpoints
- Database: MongoDB (replica sets, sharding for scale)
- Cloud Infrastructure: AWS (ECS/Fargate, Lambda, S3, CloudFront)
- Payment Gateways: Local (EcoCash, OneMoney, ZIPIT), International (Stripe, Flutterwave)
- AI Agents: Sandbox → Staging → Production rollout with human supervision
- CI/CD: GitHub Actions, Docker containers, automated tests, canary deploys
- Security: Field-level encryption, RBAC, WAF, PCI DSS compliance

### 5. KEY TAKEAWAYS

- End-to-end B2B marketplace with mobile and web access
- Fully integrated payments, logistics, and AI-powered development pipeline
- Scalable, secure, and regulatory-compliant
- Continuous monitoring, automated maintenance, and predictive analytics
- Incremental, phased rollout with pilot → regional → international expansion