

TRADEWISER - COMPREHENSIVE BUSINESS CONCEPT & IMPLEMENTATION STRATEGY

EXECUTIVE SUMMARY

TradeWiser is an **agricultural commodity warehousing and financing platform** that digitizes the entire commodity value chain from farm to finance. It transforms physical agricultural produce into digital assets through electronic warehouse receipts (eWRs), enabling farmers to access credit facilities using their stored commodities as collateral.

Vision: To become the "Zerodha of Agricultural Commodities" - making commodity storage, trading, and financing as simple as stock trading.

BUSINESS CONCEPT DEEP DIVE

1. CORE VALUE PROPOSITION

For Farmers:

- **Instant Liquidity:** Convert stored commodities into credit line without selling
- **Quality Assurance:** Professional storage with quality certification
- **Price Discovery:** Access real-time market pricing
- **Financial Inclusion:** Credit access using physical assets as collateral

For Warehouses:

- **Digital Transformation:** Modern inventory management and quality systems
- **Revenue Optimization:** Integrated storage, quality, and financing services
- **Risk Reduction:** Blockchain-verified transactions and quality reports

For Lenders/NBFCs:

- **Collateral Security:** Physical commodities with quality certification
- **Risk Assessment:** AI-powered quality and price analytics
- **Process Automation:** Digital loan processing and management
- **Portfolio Diversification:** Agricultural lending with asset backing

2. BUSINESS MODEL

Revenue Streams:

1. **Storage Fees:** Monthly warehouse charges (₹2-5/quintal/month)
2. **Quality Testing:** Assessment charges (₹100-500/lot)
3. **Credit Line Commission:** 2-3% on credit facility amount
4. **Transaction Fees:** 0.5% on commodity trades
5. **Insurance Premium:** 1-2% on commodity value
6. **Platform Fees:** Technology service charges to warehouses

Unit Economics:

- **Average Transaction Size:** ₹2-5 Lakhs per farmer
- **Customer Acquisition Cost:** ₹5,000-8,000
- **Customer Lifetime Value:** ₹50,000-80,000
- **Gross Margin:** 60-70%

DETAILED USER STORIES

USER PERSONA: RAJESH KUMAR (Progressive Farmer, Haryana)

Profile: 35 years old, 20 acres farm, annual production 500 MT wheat/rice

Pain Points: Immediate cash needs, storage limitations, price volatility

Tech Comfort: Smartphone user, WhatsApp, basic banking apps

COMPLETE USER JOURNEY

STORY 1: FARMER REGISTRATION & ONBOARDING

AS A farmer who has just harvested my crop,
I WANT TO quickly register and verify my identity,
SO THAT I can start using TradeWiser services immediately.

DETAILED FLOW:

1. Farmer opens TradeWiser app on smartphone
2. Enters mobile number (+91-9876543210)
3. Receives OTP via SMS (OTP: 847392)
4. Enters OTP to verify mobile number
5. System creates basic profile with mobile number
6. Farmer uploads Aadhaar card photo using camera
7. System extracts details via OCR (Name: Rajesh Kumar, DOB: 15/08/1989)
8. Farmer uploads land documents (Khasra/Registry)
9. System verifies documents and creates full profile
10. KYC status changes to "Verified" within 2 hours
11. Welcome message with RM contact details sent via WhatsApp

ACCEPTANCE CRITERIA:

- OTP delivery within 30 seconds
- Document upload works on 2G/3G networks
- OCR accuracy >95% for Aadhaar
- Verification complete within 4 hours
- Multi-language support (Hindi/Punjabi/English)

STORY 2: COMMODITY DEPOSIT - SIMPLIFIED FLOW

AS A farmer with freshly harvested wheat,
I WANT TO deposit my commodity in a nearby warehouse,
SO THAT I can get quality certification and credit access.

DETAILED FLOW:

1. Farmer opens app, taps "Deposit Commodity"
2. Simple form appears with 4 fields:
 - Commodity Name: [Dropdown with search] "Wheat"
 - Quantity: [Number input] "250"
 - Unit: [Auto-selected] "Quintals"
 - Quality (optional): [Skip for now]
3. App shows estimated value: "₹6,25,000" in real-time
4. Farmer taps "Find Warehouses"
5. App uses GPS location to show 5 nearest warehouses:

▮ Punjab Grains Ltd. - 2.3 km away

★ 4.5 rating • ₹3/quintal/month • Available space: 500 MT

▮ Haryana Agro Warehouse - 5.8 km away

★ 4.2 rating • ₹2.5/quintal/month • Available space: 1200 MT

▮ Karnal Central Storage - 8.1 km away

★ 4.7 rating • ₹3.5/quintal/month • Available space: 800 MT

6. Farmer selects "Punjab Grains Ltd."

7. System shows delivery options:

▮ Self-Delivery: Bring to warehouse yourself

▮ Pickup Service: ₹500 pickup fee

8. Farmer selects "Pickup Service"

9. Calendar widget shows available slots:

▮ Tomorrow (Sep 10): 10 AM ✓ 2 PM ✓ 4 PM ✓

▮ Day After (Sep 11): 9 AM ✓ 1 PM ✓ 3 PM ✓

10. Farmer selects "Sep 10, 2 PM"

11. Map shows pickup location pin, farmer adjusts if needed

12. Farmer enters pickup address: "Village Karnal Kalan, Near Gurudwara"

13. Confirmation screen shows:

...

- ✓ Commodity: 250 quintals Wheat
 - ✓ Warehouse: Punjab Grains Ltd.
 - ✓ Pickup: Sep 10, 2 PM
 - ✓ Address: Village Karnal Kalan, Near Gurudwara
 - ✓ Total Cost: Storage ₹750/month + Pickup ₹500
- ...

14. Farmer taps "Confirm Deposit"

15. Deposit created, tracking starts automatically

16. WhatsApp message sent: "Your deposit TW-12345 is confirmed! Track progress in app."

ACCEPTANCE CRITERIA:

- Form completion in <2 minutes
- Warehouse suggestions based on distance + rating + cost
- Real-time availability checking
- GPS-accurate pickup location
- Pickup slots synchronized with warehouse availability
- Clear cost transparency upfront
- Immediate confirmation and tracking setup

STORY 3: REAL-TIME PROCESS TRACKING

AS A farmer who has scheduled commodity pickup,
I WANT TO track the entire process in real-time,
SO THAT I know exactly what's happening with my commodity.

DETAILED FLOW:

1. App shows tracking screen with progress bar:

▮ TRACKING: TW-12345 (250 Quintals Wheat)

Progress:  80% Complete

- ✓ Pickup Scheduled (Sep 10, 2 PM)
- ✓ Vehicle Dispatched (Sep 10, 1:30 PM)
- ✓ Arrived at Farm (Sep 10, 2:10 PM)
- ✓ Loading Complete (Sep 10, 2:45 PM)
- ✓ En Route to Warehouse (Sep 10, 3:00 PM)
- ✓ Arrived at Warehouse (Sep 10, 4:15 PM)
- ✓ Unloading Complete (Sep 10, 4:30 PM)
- ▮ Weight & Quality Check (In Progress...)
- ▮ Receipt Generation (Pending)

2. Real-time notifications via WhatsApp:

- ▮ 2:10 PM: "Vehicle arrived at your farm. Driver: Suresh (Ph: 9876543210)"
- ▮ 3:00 PM: "Loading complete. Your wheat is en route to warehouse."
- ▮ 4:30 PM: "Arrived at warehouse. Starting weight verification..."

3. Live updates from warehouse:

▮ WEIGHT VERIFICATION RESULTS

Declared: 250 quintals

Actual: 248.5 quintals (-1.5 quintal difference)

Status: ✓ Within acceptable range (<2% variance)

4. Quality assessment in progress:

▮ QUALITY TESTING - LIVE RESULTS

Moisture Content: 11.2% ✓ (Target: <12%)

Foreign Matter: 1.8% ✓ (Target: <2%)

Broken Grains: 2.1% ✓ (Target: <3%)

Pest Infestation: None ✓

Preliminary Grade: A (Excellent Quality)

Final Report: Available in 2 hours

5. Price discovery and valuation:

▮ MARKET VALUATION UPDATE

Base Price: ₹2,500/quintal (Current market)

Quality Bonus: +₹150/quintal (Grade A)

Final Price: ₹2,650/quintal

Total Value: ₹6,58,525 (248.5 quintals × ₹2,650)

Previous Estimate: ₹6,25,000

Gain: +₹33,525 (5.4% more than expected!)

6. Electronic Warehouse Receipt generation:

▮ eWR GENERATED SUCCESSFULLY!

Receipt No: eWR-TW-12345-2025

Commodity: Wheat (Grade A)

Quantity: 248.5 quintals

Value: ₹6,58,525

Valid Until: Sep 10, 2026

Blockchain Hash: 0x1a2b3c4d...

- ▮ Receipt stored in your Digital Demat
- ▮ Credit Line Activated: ₹5,26,820 (80% of value)

ACCEPTANCE CRITERIA:

- Real-time updates every 15 minutes minimum
- WhatsApp notifications for major milestones
- Photo updates from warehouse for verification
- Live quality test results streaming
- Immediate price discovery integration
- eWR generation within 4 hours of arrival
- Credit line activation within 1 hour of eWR

STORY 4: CREDIT LINE MANAGEMENT (OD ACCOUNT MODEL)

AS A farmer with active warehouse receipts,
I WANT TO withdraw money as needed like an overdraft account,
SO THAT I can manage my cash flow flexibly.

DETAILED FLOW:

1. Farmer opens "Credit Line" section:

▮ YOUR CREDIT LINE ACCOUNT

Total Limit: ₹5,26,820

Available Balance: ₹5,26,820

Outstanding: ₹0

▮ Backed by:

- eWR-TW-12345: ₹6,58,525 (Wheat 248.5 quintals)

Interest Rate: 12% per annum (1% per month)

Daily Interest: ₹0 (No outstanding amount)

2. Farmer needs ₹2,00,000 for fertilizer:

▮ WITHDRAW FUNDS

Enter Amount: [₹2,00,000]

Purpose: Fertilizer Purchase

Available: ₹5,26,820

After Withdrawal: ₹3,26,820 remaining

Interest Impact:

Monthly Interest: ₹2,000 (1% of ₹2,00,000)

Daily Interest: ₹66

Funds Transfer: To Bank Account XXXX-1234

3. Farmer confirms, money transferred instantly:

✓ WITHDRAWAL SUCCESSFUL

Amount: ₹2,00,000

Transaction ID: TXN-789456123

Transferred to: Punjab National Bank XXXX-1234

Time: 2 minutes

Updated Balance:

Available: ₹3,26,820

Outstanding: ₹2,00,000

Daily Interest: ₹66

4. Farmer receives SMS from bank:

☐ "A/c XXXX-1234 credited with Rs.2,00,000 from TradeWiser.

Available bal: Rs.2,45,000. PNB"

5. One month later, farmer makes partial repayment:

☐ REPAYMENT OPTIONS

Outstanding: ₹2,00,000 (Principal)

Interest Accrued: ₹2,000 (1 month)

Total Due: ₹2,02,000

Repayment Options:

☐ Pay Interest Only: ₹2,000

☐ Partial Payment: [Custom Amount]

☐ Full Settlement: ₹2,02,000

6. Farmer pays ₹1,00,000:

✓ PAYMENT PROCESSED

Paid: ₹1,00,000

Applied to: ₹2,000 (interest) + ₹98,000 (principal)

New Outstanding: ₹1,02,000

New Available Credit: ₹4,24,820

New Daily Interest: ₹34

ACCEPTANCE CRITERIA:

- Instant money transfer (<5 minutes)
- Real-time credit limit updates
- Clear interest calculations and transparency
- Multiple repayment options
- Integration with UPI/NEFT/RTGS
- SMS/WhatsApp confirmations for all transactions
- Credit limit increases automatically with new receipts

STORY 5: CUSTOMER SUPPORT & RM SYSTEM

AS A farmer facing issues or needing guidance,
I WANT TO easily connect with TradeWiser support,
SO THAT I can resolve problems quickly and get expert advice.

DETAILED FLOW:

1. Farmer has concern about quality grading, taps "Help & Support":

▮ HELP & SUPPORT

👤 Your Relationship Manager

Amit Singh - Punjab Region

▮ WhatsApp: +91-9876543210

▮ Call: Available 9 AM - 8 PM

★ Rating: 4.8/5 (from your transactions)

▮ Quick Actions:

- Report an Issue
- Track Existing Ticket
- Request Callback
- Live Chat Support

2. Farmer taps "Report an Issue":

▮ CREATE SUPPORT TICKET

Issue Category: [Quality Assessment Dispute]

Priority: [High/Medium/Low]

Description:

"My wheat was graded B but I believe it should be Grade A.

Previous crop from same field was Grade A last season."

▮ Add Photos: [Upload grain samples]

▮ Related Receipt: eWR-TW-12345

Expected Resolution: [Within 24 hours]

3. Ticket created with auto-routing:

✓ TICKET CREATED: #TW-2025-0892

Assigned to: Amit Singh (Your RM)

Department: Quality Assessment Team

SLA: Response within 4 hours, Resolution within 24 hours

Next Steps:

1. Quality team will review your samples
2. Independent 3rd party testing if needed
3. Grade adjustment + compensation if valid

▢ You'll receive updates via WhatsApp

4. Real-time ticket tracking:

▢ TICKET STATUS: #TW-2025-0892

✓ Created: Sep 11, 10:30 AM

✓ Acknowledged: Sep 11, 11:15 AM (Amit Singh)

▢ Under Review: Quality team examining samples

▢ 3rd Party Test: Scheduled for Sep 12, 9 AM

▢ Resolution: Expected by Sep 12, 6 PM

5. WhatsApp updates from RM:

▢ 11:15 AM: "Hi Rajesh, I've received your quality dispute ticket. Reviewing your samples now."

▢ 2:30 PM: "I can see the quality is excellent. Sending for independent verification by NABL certified lab."

▢ Next Day 11:00 AM: "Great news! Lab confirmed Grade A quality. We're upgrading your receipt and will compensate the price difference."

6. Issue resolution and compensation:

✓ TICKET RESOLVED: #TW-2025-0892

Resolution: Grade upgraded from B to A

Compensation:

Price Difference: ₹150/quintal × 248.5 quintals = ₹37,275

Processing Fee Waiver: ₹500

Total Credit: ₹37,775

Updated Receipt Value: ₹6,95,800 (from ₹6,58,525)

Updated Credit Limit: ₹5,56,640 (from ₹5,26,820)

□ Bonus: Extra ₹1,000 for the inconvenience

ACCEPTANCE CRITERIA:

- 24/7 ticket creation system
- Response within 4 hours during business days
- WhatsApp integration for updates
- Photo/video upload support
- Automatic compensation processing
- RM call-back within 2 hours for high priority issues
- Multi-language support for regional languages

STORY 6: WAREHOUSE MANAGEMENT INTEGRATION

AS A warehouse operator using TradeWiser,
I WANT TO receive and process commodity deposits efficiently,
SO THAT I can provide excellent service and optimize operations.

DETAILED FLOW (Warehouse Side):

1. Warehouse receives notification:

□ NEW DEPOSIT INCOMING

Farmer: Rajesh Kumar (+91-9876543210)

Commodity: Wheat, 250 quintals

Expected Arrival: Sep 10, 4:15 PM

Pickup Address: Village Karnal Kalan

Deposit ID: TW-12345

□ Assign Vehicle: [Select from available]

□ Assign Team: [Select warehouse team]

2. Warehouse workflow system:

□ WAREHOUSE CHECKLIST - TW-12345

✓ Vehicle Dispatched: 1:30 PM

✓ Commodity Collected: 2:45 PM

✓ Arrived at Warehouse: 4:15 PM

✓ Initial Weight Check: 248.5 quintals

- ▮ Moisture Analysis: Testing... 11.2%
- ▮ Foreign Matter Test: Pending
- ▮ Pest Inspection: Pending
- ▮ Storage Allocation: Pending

3. Quality testing integration:

▮ QUALITY TESTING MODULE

Sample ID: QT-TW-12345-001

Commodity: Wheat

Tests Required:

- ✓ Moisture (11.2%) - PASS
- ✓ Foreign Matter (1.8%) - PASS
- ✓ Broken Grains (2.1%) - PASS
- ✓ Pest Check (None found) - PASS

Recommended Grade: A

Confidence: 94%

▮ Generate Report: [PDF Quality Certificate]

4. Storage allocation and receipt generation:

▮ STORAGE MANAGEMENT

Warehouse: Punjab Grains Ltd, Section C

Allocated Space: Bay C-12 to C-15

Storage Conditions: Temperature controlled, pest monitored

QR Codes Generated: 50 sacks × 5 quintals each

▮ eWR Auto-Generation:

Receipt: eWR-TW-12345-2025

Status: ✓ Generated and uploaded to blockchain

Farmer Notification: ✓ Sent

5. Google Sheets integration for warehouse operations:

▮ WAREHOUSE OPERATIONS SHEET (Auto-Updated)

Date	Deposit ID	Farmer	Commodity	Quantity	Quality	Revenue
Sep10	TW-12345	Rajesh	Wheat	248.5	Grade A	₹2,485
Sep10	TW-12346	Suresh	Rice	180.0	Grade B	₹1,800
Sep11	TW-12347	Ramesh	Bajra	120.0	Grade A	₹1,200

Monthly Summary:

Total Deposits: 47

Total Revenue: ₹1,23,450

Occupancy: 78%

ACCEPTANCE CRITERIA:

- Real-time inventory updates
- Automated quality testing workflows
- QR code generation for individual sacks
- Google Sheets integration for reporting
- Blockchain integration for receipt verification
- Mobile app for warehouse staff
- Automated billing and revenue tracking

CURRENT STATE ANALYSIS

TECHNICAL STACK EVALUATION

✓ WORKING COMPONENTS:

1. **Database Schema:** Comprehensive with all required tables
2. **Authentication System:** Session-based login working
3. **Warehouse Management:** Database with 500+ warehouses
4. **Receipt Generation:** eWR creation functionality
5. **Credit System:** Basic overdraft implementation
6. **Webhook Integration:** External module connectivity

✗ MISSING CRITICAL FEATURES:

1. PHONE OTP AUTHENTICATION

Current: Username/password login

Required: Phone number + OTP verification

Implementation Gap: Need Twilio/MSG91 integration

2. SIMPLIFIED UX/UI

Current: Complex multi-step forms

Required: Single-page, intuitive interfaces

Implementation Gap: Frontend restructuring needed

3. LOCATION-BASED WAREHOUSE SELECTION

Current: Static warehouse list

Required: GPS-based suggestions with distance/ratings

Implementation Gap: Location services integration

4. PICKUP/DELIVERY SCHEDULING

Current: No scheduling system

Required: Calendar integration with time slots

Implementation Gap: Complete scheduling module

5. QUALITY ASSESSMENT WORKFLOW

Current: Mock/demo quality assessment

Required: Real IoT/API integration

Implementation Gap: External API connections

6. PRICING INTEGRATION

Current: Static pricing

Required: Real-time market prices

Implementation Gap: Market data API integration

7. CUSTOMER SUPPORT SYSTEM

Current: No support/ticketing

Required: RM assignment, ticket management

Implementation Gap: Complete support module

8. GOOGLE SHEETS INTEGRATION

Current: No external integrations

Required: Warehouse data sync

Implementation Gap: Google Sheets API integration

9. PAYMENT GATEWAY INTEGRATION

Current: Mock transactions

Required: Bank API/UPI integration

Implementation Gap: Banking API connections

10. MOBILE RESPONSIVENESS

Current: Desktop-focused

Required: Mobile-first design

Implementation Gap: Responsive design overhaul

IMPLEMENTATION PRIORITY MATRIX

PHASE 1 (Immediate - 2 weeks)

Goal: Core working platform with simplified UX

1. **Phone OTP Authentication** (2 days)
2. **Simplified Deposit Form** (2 days)
3. **Working Credit Line System** (3 days)
4. **GPS Warehouse Selection** (2 days)
5. **Mobile Responsive Design** (3 days)
6. **Basic Support System** (2 days)

PHASE 2 (Short Term - 4 weeks)

Goal: Complete workflow integration

1. **Pickup/Delivery Scheduling** (5 days)
2. **Quality Testing Integration** (7 days)
3. **Real-time Process Tracking** (5 days)
4. **Payment Gateway Integration** (4 days)
5. **Google Sheets Integration** (3 days)

PHASE 3 (Medium Term - 8 weeks)

Goal: Advanced features and scaling

1. **Advanced Analytics Dashboard** (7 days)
2. **Multi-language Support** (5 days)
3. **Bulk Operations** (7 days)
4. **Advanced Reporting** (5 days)
5. **API Documentation** (3 days)

TECHNOLOGY INTEGRATION REQUIREMENTS

EXTERNAL SERVICE INTEGRATIONS

1. SMS/OTP Services

- **Primary:** MSG91 (India-focused)
- **Backup:** Twilio
- **Usage:** Authentication, notifications
- **Cost:** ₹0.15/SMS

2. Location Services

- **Service:** Google Maps API
- **Usage:** Warehouse discovery, distance calculation
- **Cost:** \$2/1000 requests

3. Quality Testing APIs

- **Integration:** IoT sensors, lab equipment APIs
- **Standards:** NABL certified labs
- **Usage:** Moisture, purity, grade assessment

4. Pricing APIs

- **Sources:** NCDEX, MCX, local mandi rates
- **Usage:** Real-time commodity pricing
- **Update Frequency:** Every 15 minutes

5. Payment Gateways

- **UPI:** PhonePe, Razorpay UPI
- **Banking:** ICICI Direct Banking APIs
- **Usage:** Instant money transfers
- **Settlement:** T+0

6. Google Sheets Integration

- **API:** Google Sheets API v4
- **Usage:** Warehouse operations, reporting
- **Permissions:** Read/Write access

7. WhatsApp Business API

- **Service:** Meta WhatsApp Business
- **Usage:** Notifications, support
- **Cost:** \$0.05/message

BUSINESS METRICS & KPIS

USER ENGAGEMENT METRICS

- **Daily Active Users:** Target 1000+ by month 3
- **Session Duration:** Target 8+ minutes
- **Feature Adoption:** 80% deposit completion rate
- **User Retention:** 70% monthly retention

BUSINESS METRICS

- **GMV (Gross Merchandise Value):** ₹10 Cr/month by month 6
- **Average Transaction Size:** ₹3 Lakhs
- **Credit Utilization:** 60% of available limits
- **Default Rate:** <2%

OPERATIONAL METRICS

- **Warehouse Partner Network:** 50+ warehouses by month 6
- **Geographic Coverage:** 5 states initially
- **Process Automation:** 90% straight-through processing
- **Customer Support:** <4 hour resolution time

FINANCIAL PROJECTIONS

YEAR 1 TARGETS

- **Users:** 5,000 farmers
- **GMV:** ₹150 Crores
- **Revenue:** ₹4.5 Crores
- **EBITDA:** -₹2 Crores (investment phase)

YEAR 2 TARGETS

- **Users:** 25,000 farmers
- **GMV:** ₹750 Crores
- **Revenue:** ₹22.5 Crores
- **EBITDA:** ₹5 Crores (profitability)

YEAR 3 TARGETS

- **Users:** 100,000 farmers
- **GMV:** ₹3,000 Crores
- **Revenue:** ₹90 Crores
- **EBITDA:** ₹25 Crores

RISK MITIGATION STRATEGIES

TECHNOLOGY RISKS

- **API Dependencies:** Multiple backup providers
- **Data Security:** End-to-end encryption
- **Scalability:** Cloud-native architecture
- **Uptime:** 99.9% availability SLA

BUSINESS RISKS

- **Regulatory Changes:** Legal compliance team
- **Market Volatility:** Price hedging mechanisms
- **Credit Risk:** Conservative LTV ratios (80%)
- **Competition:** Focus on user experience differentiation

OPERATIONAL RISKS

- **Quality Disputes:** Third-party verification system
- **Warehouse Partner Risk:** Diversified network
- **Fraud Prevention:** AI-based anomaly detection
- **Customer Support:** 24/7 multilingual support

This comprehensive business concept provides the foundation for building TradeWiser into a market-leading agricultural fintech platform.