

AgroTrack-Lite: Lean Canvas

Problem

Top 3 Problems:

1. **Market Access:** 800M smallholder farmers can't reach buyers directly
 - 70% post-harvest losses due to lack of buyers
 - Must sell to exploitative middlemen at 40-60% below market price
 - No visibility into market demand
2. **Trust Gap:** No mechanism to ensure fair payment
 - Farmers deliver but don't get paid (30% of transactions)
 - No written contracts or proof of agreement
 - Disputes take months, farmers always lose
3. **Technology Barrier:** 95% have feature phones, not smartphones
 - Can't use existing apps (WhatsApp, FarmDrive, Twiga)
 - No internet connectivity in rural areas
 - Illiteracy rates up to 40% in some regions

Existing Alternatives:

- Physical middlemen (take 40% cut)
 - WhatsApp groups (require smartphone + internet)
 - Farmer cooperatives (slow, bureaucratic)
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Customer Segments

Early Adopters:

- Smallholder farmers (1-5 acres)
- Growing cash crops (maize, beans, coffee)
- Located within 50km of urban markets
- Age 25-50, basic literacy

- Already using mobile money (M-Pesa)

Target Geography:

- Phase 1: Kenya (2.5M smallholder farmers)
- Phase 2: East Africa (20M farmers)
- Phase 3: Sub-Saharan Africa (175M farmers)

User Personas:

Mary (Primary)

- 35, grows maize in Kisumu
- Has Nokia feature phone
- Uses M-Pesa for remittances
- Earns \$200/month, loses \$60 to middlemen
- Wants: Fair price, guaranteed payment

Peter (Secondary - Buyer)

- 45, owns restaurant in Nairobi
 - Wants: Direct farmer access, quality produce
 - Current pain: Unreliable middlemen, price volatility
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Unique Value Proposition

High-Level Concept: "Uber for farm produce, but it works on SMS"

Single, Clear Message: "One text message. Instant marketplace. Automatic escrow. Zero middlemen."

Why Now?

- Mobile money penetration: 85% in Kenya
- Feature phone ownership: 95%
- Blockchain escrow: Now affordable (\$0.001/tx)
- AI agents: Can coordinate complex marketplaces

3 Key Benefits:

1. **+40% Income:** Eliminate middleman, get market price
 2. **100% Payment Guarantee:** Blockchain escrow releases automatically
 3. **Zero Barriers:** Works on any phone, no app, no internet
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Solution

MVP Features (What We Built):

1. SMS Marketplace

- Send: "Maize 200kg Kisumu"
- Receive: Instant price quote from AI

2. Multi-Agent AI

- Risk Agent: Scores farmer reliability
- Market Agent: Real-time price discovery
- Escrow Agent: Automatic payment custody

3. Hedera Integration

- HCS: Immutable transaction log
- HTS: Token-based escrow
- Mirror Node: Historical analytics

4. Delivery Verification

- OTP-based proof of delivery
- Automatic payment release
- Digital receipt generation

How It Works (30 seconds):

Farmer → SMS "Maize 200kg Kisumu"
AI → Matches best buyer, checks risk
System → "Offer: 35 KES/kg. YES to accept"
Farmer → "YES [OTP]"
Blockchain → Locks escrow
Farmer → Delivers to hub
Clerk → Confirms with OTP
Blockchain → Releases payment to farmer
M-Pesa → Cash in farmer's phone

Channels

Customer Acquisition:

Phase 1: Pilot (Months 1-3)

- Agricultural extension officers (government)
- Farmer cooperative partnerships
- In-person demo days at markets
- **Cost:** \$0 (relationship-based)

Phase 2: Growth (Months 4-12)

- Word-of-mouth referrals (incentivized)
- Radio ads in local language (Swahili)
- SMS campaigns to existing mobile money users
- **Cost:** \$10K

Phase 3: Scale (Year 2+)

- Partnership with NGOs (FAO, World Food Programme)
- Integration with agricultural input suppliers
- Government agricultural programs
- **Cost:** \$50K/year

Distribution:

- Direct: SMS gateway (Safaricom, Airtel)

- Indirect: Through farmer cooperatives
 - Platform: API for agricultural apps
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Revenue Streams

Primary Revenue:

1. Transaction Fee: 2%

- Applied to buyer payment
- Covers SMS, blockchain, and operations
- Example: 200kg maize @ 35 KES/kg = 7,000 KES
- Fee: 140 KES (\$1.00)

Secondary Revenue: 2. Premium Services: \$5/month

- Price alerts
- Market trend reports
- Bulk buyer accounts
- Priority matching

3. API Access: \$0.10/call

- Agricultural apps
- Input suppliers
- Insurance companies
- Credit scoring bureaus

4. Data Insights (Anonymized): \$50K/year

- Market research firms
- Government agricultural departments
- NGOs and development agencies

Revenue Projections:

Metric	Year 1	Year 2	Year 3
Farmers	10,000	100,000	500,000
Transactions/Year	120,000	1.2M	6M
Avg Transaction	\$50	\$50	\$50
Revenue @ 2%	\$120K	\$1.2M	\$6M
Premium Users	100	2,000	20,000
Premium Revenue	\$6K	\$120K	\$1.2M
Total Revenue	\$126K	\$1.32M	\$7.2M

Cost Structure

Fixed Costs (Monthly):

- Cloud Infrastructure: \$500
- Hedera Fees: \$100
- Team Salaries: \$15,000 (3 people)
- Office/Operations: \$1,000
- **Total Fixed:** \$16,600/month = \$200K/year

Variable Costs (Per Transaction):

- SMS: \$0.05 (2 messages per transaction)
- Hedera Fees: \$0.001
- M-Pesa Payout: \$0.10
- **Total Variable:** \$0.151 per transaction

Year 1 Cost Structure:

- Fixed: \$200K
- Variable: \$18K (120K transactions)
- Marketing: \$10K
- **Total:** \$228K

Break-Even:

- Need: \$228K revenue

- At 2% fee on \$50 avg: \$1 per transaction
- Break-even: 228,000 transactions
- **≈ 19,000 farmers doing 1 transaction/month**

Funding Requirement:

- Seed: \$250K (18 months runway)
 - Series A: \$2M (scale to 100K farmers)
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Key Metrics

Pirate Metrics (AARRR):

Acquisition:

- Farmers onboarded/month
- Cost per acquisition: <\$5
- Target: 1,000/month by Month 6

Activation:

- % who complete first transaction
- Target: >60%
- Metric: First transaction within 7 days

Retention:

- Monthly active farmers
- Target: >70% monthly retention
- Metric: At least 1 transaction/month

Revenue:

- Avg revenue per farmer/month
- Target: \$1.20 (1.2 transactions × \$1 fee)
- Metric: ARPU (Average Revenue Per User)

Referral:

- Viral coefficient (k-factor)
- Target: >0.5 (1 farmer refers 0.5 new farmers)
- Metric: Referrals per active user

Key Performance Indicators:

KPI	Month 3	Month 6	Month 12
Farmers	500	2,000	10,000
Transactions	1,500	12,000	120,000
Revenue	\$1,500	\$12,000	\$120,000
Retention	50%	65%	75%
NPS Score	40	60	70+

Unfair Advantage

What can't be easily copied?

1. Multi-Agent Architecture on Hedera

- Novel: 5 autonomous agents coordinating via HCS
- Defensible: 6 months of R&D, working implementation
- Network effect: More transactions = better AI

2. SMS + Blockchain UX

- First-mover: No wallet, no app, just SMS
- Defensible: Deep integration with local telcos
- Hard to replicate: Requires carrier relationships

3. Agricultural Domain Expertise

- Team background in agritech
- Understanding of farmer behavior
- Trust built through cooperatives

4. Hedera Cost Advantage

- \$0.001 per transaction (vs \$5+ on Ethereum)
- Enables micro-transactions

- Sustainable at scale

5. Early Mover in Kenya

- First to combine AI + blockchain + SMS for agriculture
- Building farmer network (network effects)
- Government/NGO partnerships forming

Why Competitors Can't Easily Copy:

- Technical complexity: Multi-agent AI + blockchain
 - Distribution: Need farmer cooperative partnerships
 - Economics: Need ultra-low transaction fees
 - Trust: Farmers reluctant to try new platforms
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Customer Acquisition Cost (CAC) & Lifetime Value (LTV)

CAC Calculation:

- Organic (cooperative referral): \$2/farmer
- Paid (radio ads): \$8/farmer
- Blended CAC: \$5/farmer

LTV Calculation:

- Avg transaction fee: \$1
- Transactions per month: 1.2
- Monthly revenue: \$1.20/farmer
- Avg lifespan: 24 months
- $LTV = \$1.20 \times 24 = \28.80

LTV:CAC Ratio = 5.76:1  (Target: >3:1)

Payback Period:

- CAC: \$5
- Monthly revenue: \$1.20

- Payback = $5 \div 1.20 = \mathbf{4.2 \text{ months}}$  (Target: <12 months)
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Risk Analysis

Key Risks & Mitigation:

1. Risk: Farmers don't trust technology

- Mitigation: Partner with respected cooperatives
- Start with small pilot, build social proof
- Money-back guarantee for first transaction

2. Risk: SMS costs are too high

- Mitigation: Negotiate bulk rates with telcos
- Optimize to 2 SMS per transaction
- Pass through costs in transaction fee

3. Risk: Hedera adoption by developers

- Mitigation: We're early, but that's opportunity
- Hedera growing 300% YoY
- Strong ecosystem support

4. Risk: Regulatory challenges

- Mitigation: Working with agricultural authorities
- Blockchain as record-keeping, not finance
- Partner with licensed payment processors

5. Risk: Competition from larger players

- Mitigation: Focus on underserved segment (feature phones)
 - Build network effects quickly
 - Deep integration with Hedera (not easily replicated)
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Success Criteria (12 Months)

Must Have:

-  10,000 farmers onboarded

- 120,000 transactions processed
- 70%+ retention rate
- \$120K revenue
- Partnership with 3+ cooperatives

Nice to Have:

- Featured in agricultural publication
- Government partnership secured
- Expansion to second country
- Seed funding raised (\$250K+)

North Star Metric: "Farmers earning 40% more than before AgroTrack"

Team & Advisors

Core Team:

- **You:** Technical Lead (Hedera + AI expertise)
- **[Need]:** Agricultural Specialist
- **[Need]:** Business Development (cooperative partnerships)

Advisors:

- Agricultural extension officers (validation)
- Blockchain developers (technical)
- NGO representatives (distribution)

Hiring Plan (12 months):

- Month 3: Operations Manager
 - Month 6: Marketing Lead
 - Month 9: 2 Customer Success Agents
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Weeks 1-2: Problem Validation

- Interview 20 farmers
- Validate: Do they have this problem?
- Metric: >70% say "this is a major pain"

Weeks 3-4: Solution Validation

- Demo SMS flow to 10 farmers
- Validate: Would they use this?
- Metric: >80% say "yes, I'd try it"

Months 1-3: Product-Market Fit

- Pilot with 100 farmers
- Validate: Do they pay/transact repeatedly?
- Metric: >50% do 3+ transactions

Months 4-12: Scale Validation

- Grow to 10,000 farmers
 - Validate: Can we acquire profitably?
 - Metric: LTV:CAC > 3:1
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Competitive Advantage Summary

vs Traditional Middlemen:

- 40% higher prices for farmers
- Guaranteed payment (blockchain escrow)
- Transparent pricing

vs Smartphone Apps (Twiga, FarmDrive):

- Works on feature phones (10x larger market)
- No internet required

- No app installation

vs Farmer Cooperatives:

- Instant matching (vs weeks)
- Individual agency (no bureaucracy)
- 24/7 operation

vs Web2 Solutions:

- Trustless escrow (can't be manipulated)
- Transparent audit trail
- Survives local system failures

Our Moat: Multi-agent AI + Hedera + SMS + farmer network = hard to replicate

Last Updated: December 2024 **Version:** 2.0 (Hedera Ascension Submission)