AgriChainX – Agriculture Supply Chain Transparency System

Phase 1: Problem Understanding & Industry Analysis

1. Problem Statement

Farmers, distributors, and retailers face challenges in managing the movement of crops and produce efficiently. Current processes are mostly manual (phone calls, local agents, middlemen), which leads to:

- Lack of visibility in produce movement.
- Delays in delivery from farm to store.
- Difficulty in tracking freshness and expiry of produce.
- Farmers not knowing demand trends → leading to wastage.

Need: A centralized digital platform where farmers, distributors, retailers, and customers can collaborate to ensure smooth, fast, and transparent agricultural supply chain operations.

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2. Objectives

The system aims to:

1. Provide a digital platform for farmers, distributors, retailers, and customers.
2. Streamline the flow of crops and orders in real-time.
3. Ensure transparency of produce origin and freshness.
4. Offer alerts for stock expiry, low quantity, and delayed shipments.
5. Enable dashboards for monitoring and auditing sales and supply chain performance.

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3. Stakeholder Analysis

Stakeholder	Role in System
Admin	Manages users, roles, permissions, and global settings.
Farmer	Adds produce details, updates stock, views sales reports.
Distributor	Creates shipments, manages transport, updates delivery status.
Retailer	Places bulk orders, manages inventory, sells to customers.
Customer (Optional)	Places small orders, views produce freshness and source.

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4. Business Process Mapping

Current Process (Manual):

1. Farmer harvests produce → communicates via agents/phone.
2. Distributor arranges transport manually.
3. Retailer does not have visibility of freshness or demand trends.
4. Customers have no idea about source of food.

Proposed Process (Digital System):

1. Farmer logs into system → adds new produce.
2. Distributor gets notified → creates a shipment.
3. Retailer tracks stock & orders online.
4. Customers can view produce source & freshness.

5. System maintains a full record of transactions and deliveries.

5. Industry-Specific Use Case Analysis

- **Agriculture Industry Challenge**: Huge post-harvest losses due to poor logistics and lack of visibility.
- **Use Case Example**:
    o Farmer A harvests *100kg Tomatoes*.
    o Uploads details into the system.
    o Distributor assigns a truck and ships to Retailer B.
    o Retailer updates received stock, sells to customers.
    o System auto-updates stock and records sales.

6. AppExchange Exploration

- Existing apps: Food distribution systems, farmer CRM tools, generic supply chain apps.
- Gap: None are **fully focused on farm-to-consumer transparency with dashboards**.
- Conclusion: **AgriChainX** is unique and fills an important gap in agriculture digitalization.

7. Expected Outcomes

- Farmers can directly track sales and demand trends.
- Distributors handle shipments more efficiently.
- Retailers maintain healthy stock with less wastage.
- Customers get trust & transparency on food origin.
- Complete supply chain visibility and faster communication.