

Trio Dairy- A Supply Chain Management Platform for Dairy & Agriculture

Case Study



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Overview

Trio Dairy is a end-to-end Supply Chain Management Platform designed for the Dairy & Agriculture industry, connecting dairy suppliers, distribution hubs, and consumers (individual or business). The platform automates the procurement, scheduling, delivery, and billing processes for high-frequency, perishable products such as milk, curd, butter, ghee, and agricultural produce. It is a SaaS-based platform



Business Challenge

The traditional dairy and fresh produce delivery model faces key inefficiencies:

- **Inconsistent Scheduling:** Manual tracking of daily/monthly delivery schedules and pauses.
- **Manual Billing:** Labor-intensive monthly billing and invoice generation for recurring orders.
- **Lack of Visibility:** Consumers lack real-time tracking of their daily deliveries.
- **Operational Scale:** Difficulty for dairies to manage a growing subscriber base and delivery routes efficiently.

Trio Dairy addresses these issues by providing a digitized, automated platform for suppliers and a convenient subscription service for customers.

Solution

Trio Dairy digitizes and automates the entire workflow—from farm to doorstep.

It enables:

- **Order Management:** Recurring and on-demand order scheduling with frequency patterns (daily, alternate days, weekly).
- **Supplier Dashboard:** Farmers and dairy producers can manage supply quantity, dispatch schedules, and payments.
- **Inventory Control:** Automated stock updates at collection centers and delivery hubs.
- **Route Optimization:** Smart routing for delivery agents based on geography and frequency.
- **Consumer App:** Users can manage subscriptions, track deliveries, and make payments.
- **Billing & Payments:** Automated invoice generation, online payment integration, and wallet balance for recurring users.
- **Analytics Dashboard:** Sales trends, waste management, and performance insights for administrators.

Key Features

- **Subscription Management:** Supports flexible Monthly & Custom Range Subscriptions for diverse consumer needs.
- **Automated Billing & Invoices:** Generates recurring bills and professional invoices automatically, drastically reducing manual accounting effort.
- **Delivery Tracking:** Provides real-time visibility for consumers and optimizes routes for delivery personnel.
- **Daily Delivery Scheduling:** Centralized system to manage, modify, and track daily delivery commitments.
- **Role-based Access:** Ensures secure data handling and controlled feature access for dairy staff (e.g., billing vs. delivery personnel).
- **WhatsApp and SMS Notification:** Proactive communication for payment reminders, delivery confirmations, and subscription updates.

User Roles

1. Admin / Company Operator

- Monitors entire supply chain
- Manages users, inventory, orders, and billing

2. Supplier / Farmer

- Updates product availability
- Confirms collection and dispatch

3. Distributor / Hub Manager

- Tracks stock levels
- Manages delivery routes

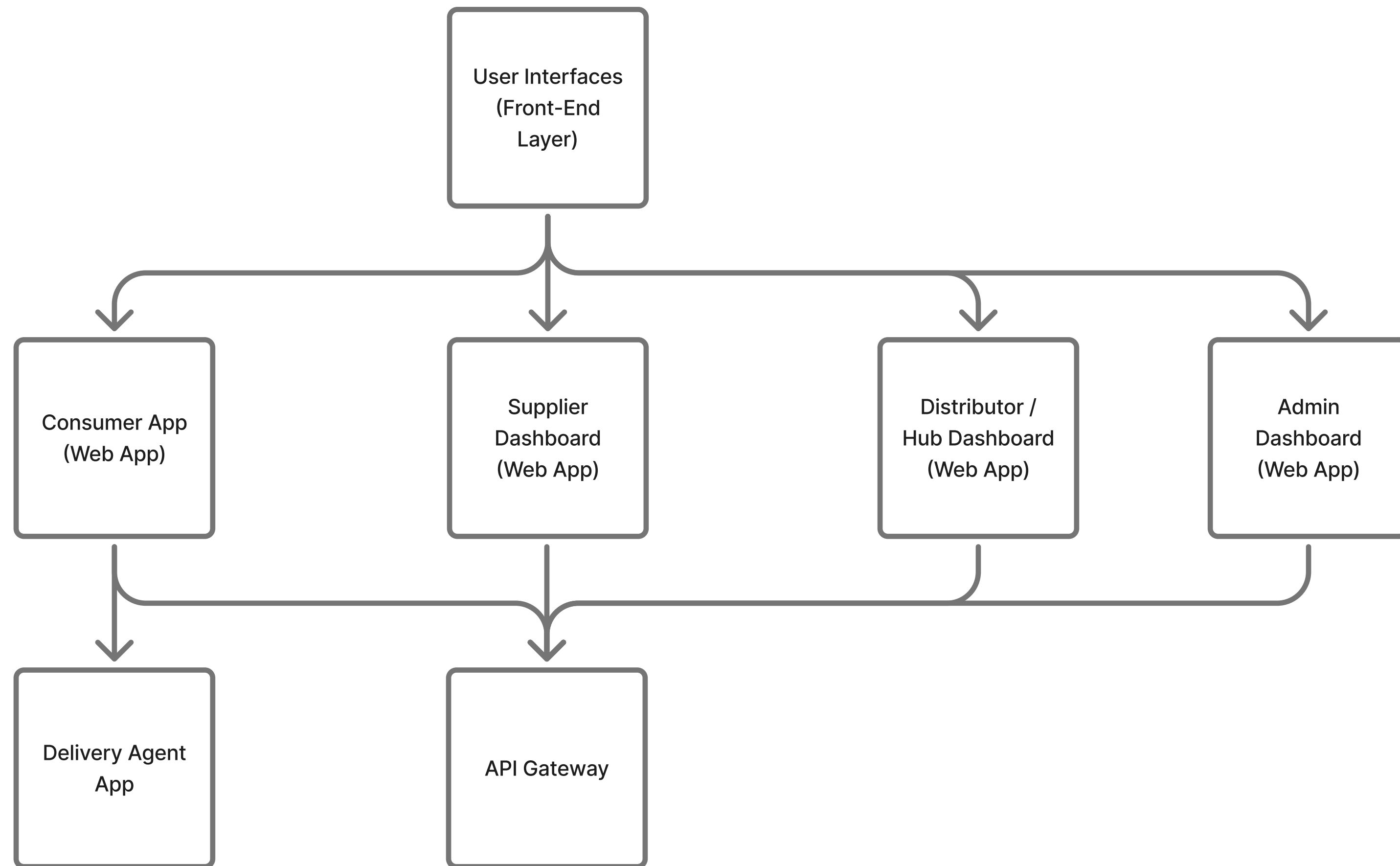
4. Consumer / Retailer

- Orders products (recurring/on-demand)
- Receives invoices and delivery confirmations

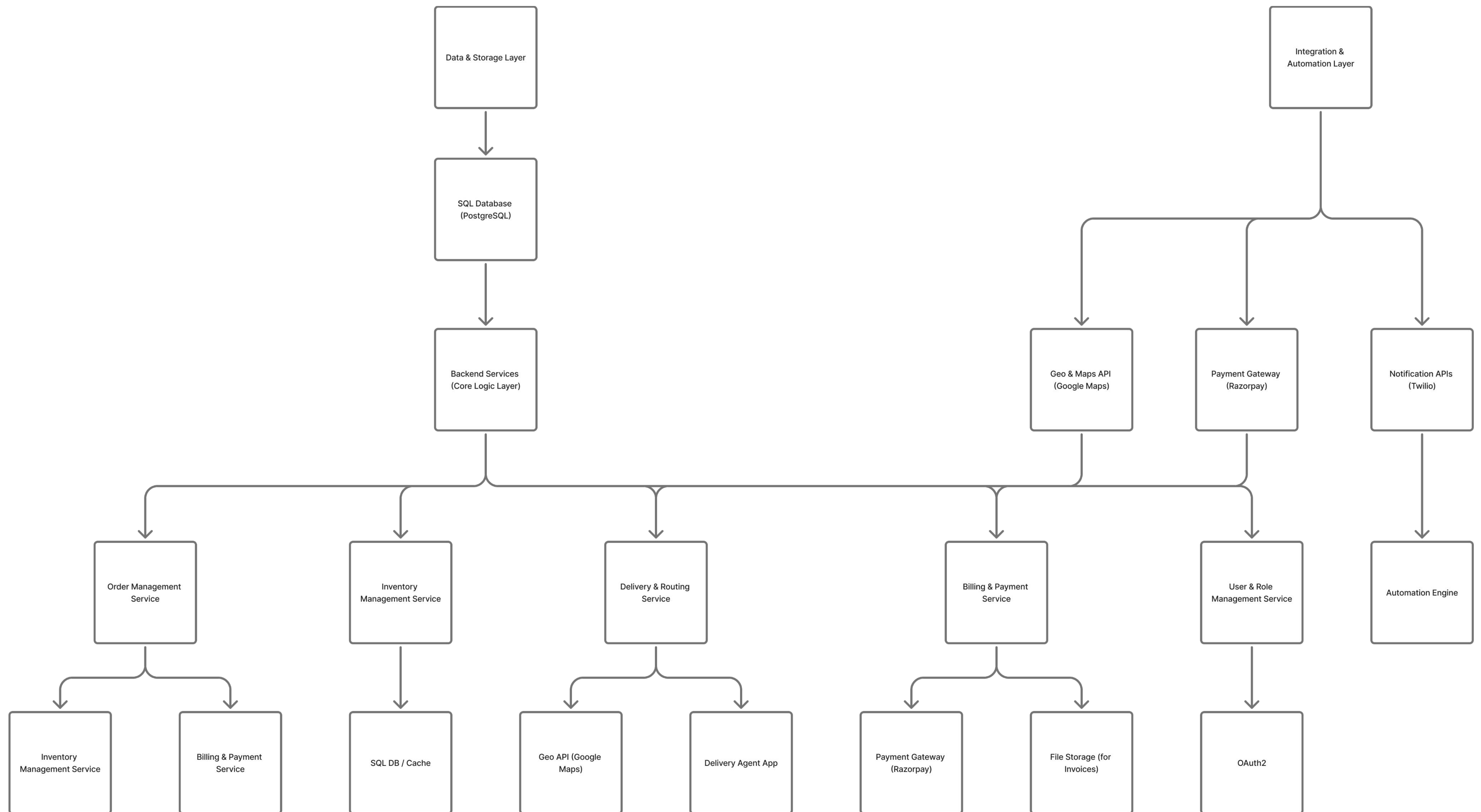
Technology Stack

Layer	Technology	Purpose
Frontend	NextJs, Tailwind, ShadCn	Modern, performant UI with utility-first styling for both supplier and consumer panels.
Backend	NextJs, NodeJS, Drizzle ORM	Fast, scalable server-side logic; Drizzle ensures type-safe and modern database querying.
Database	PostgreSQL	Robust, advanced relational database suitable for complex subscription and billing logic.
Server	Oracle Cloud	Provides enterprise-grade, high-availability cloud infrastructure for critical daily operations.

Solution Architecture (Front end)



Solution Architecture (Backend)



User Base & Adoption

- 50+ active Dairies (Sellers) rely on the platform to manage their entire supply chain.
- 5000+ active users (Consumers) utilize the platform for their daily dairy needs.

Impact & Outcomes

- **Increased Revenue Predictability:** The subscription model stabilized monthly income for dairies.
- **Reduced Administrative Costs:** Automated billing cut down accounting overhead by an estimated 50%.
- **Enhanced Customer Loyalty:** Reliable scheduling and timely notifications improved customer satisfaction and retention.

Conclusion

Trio Dairy successfully transitioned traditional dairy businesses into a modern, predictable e-commerce model. Its focus on **PostgreSQL** and **Drizzle ORM** ensures data integrity and scalability, making it a powerful tool for high-frequency subscription services.

