

Infosys Global Hackathon

Supply Chain and Logistics

Team MCKV

Team members:

Debdeep Banerjee, Ishu Gupta,
Rohan Jain, Yash Vardhan Choudhary



OptiLogix

Your ultimate solution for optimizing logistics and supply chain management. Streamline operations, enhance efficiency, and drive growth with our cutting-edge platform.

Smart Inventory

Keep track of your stock with real-time updates and predictive analytics.

Route Optimization

Find the most efficient routes for your deliveries, saving time and fuel.

Compliance Checker

Ensure all your parcels meet regulatory standards effortlessly.

Get Started

Team Information & Contributions Overview



Rohan Jain

Jadavpur University
Contribution- AI/ML algorithms & Business Plan

Salesforce Tech Accelerator | Competitive Programmer | Second Runner Up in Udhbhabhani hackathon



Debdeep Banerjee

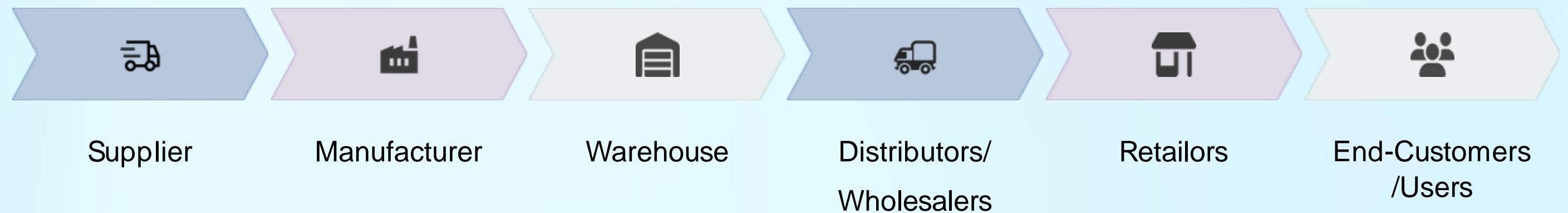
Heritage Institute of Technology
Contribution- AI agents and overall Integrations

GDG member | CIP'24 IITG | Ex-Intern @IIFON | 3rd-NSHM'24 | 3rd-mlx Kaggle | Top 5-IEEE IIFON'24 | 3rd-EIBS IITKgp

OVERVIEW

1. Introduction
2. Core Features
3. Additional Features
4. Scalability and Security
5. Business Plans
6. Team Contributions
7. Conclusion

Introduction



Core Features



Dock dispatcher



Inventory Spotter



Route Optimiser



AI agent integrations in all
features

Additional Features

1 Traffic Whisperer

2 Compliance Checker

3 Freight Quotes

4 Risk Dashboard

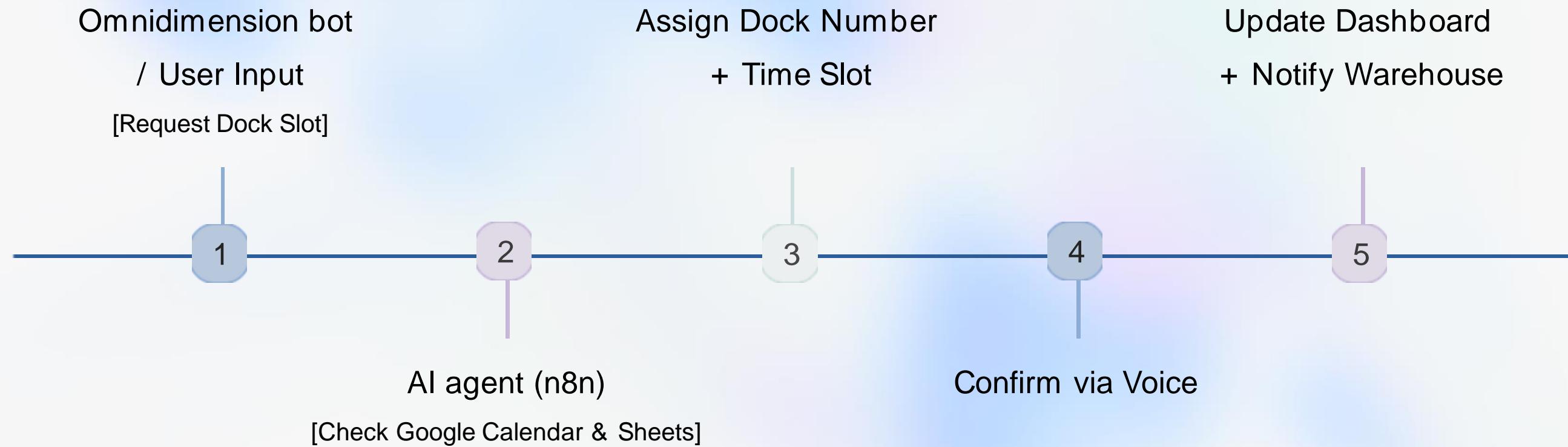
5 Demand Forecasting

6 Team Collaboration

7 Blockchain Provenance

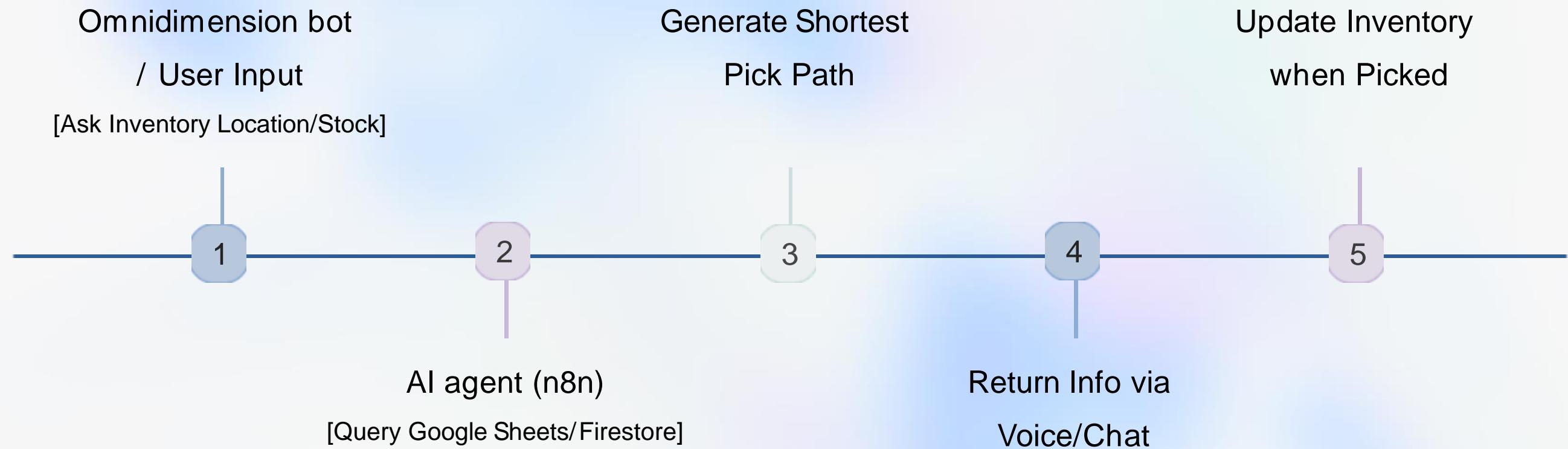
Dock Dispatcher

Streamlines truck movement and dock assignments at warehouses



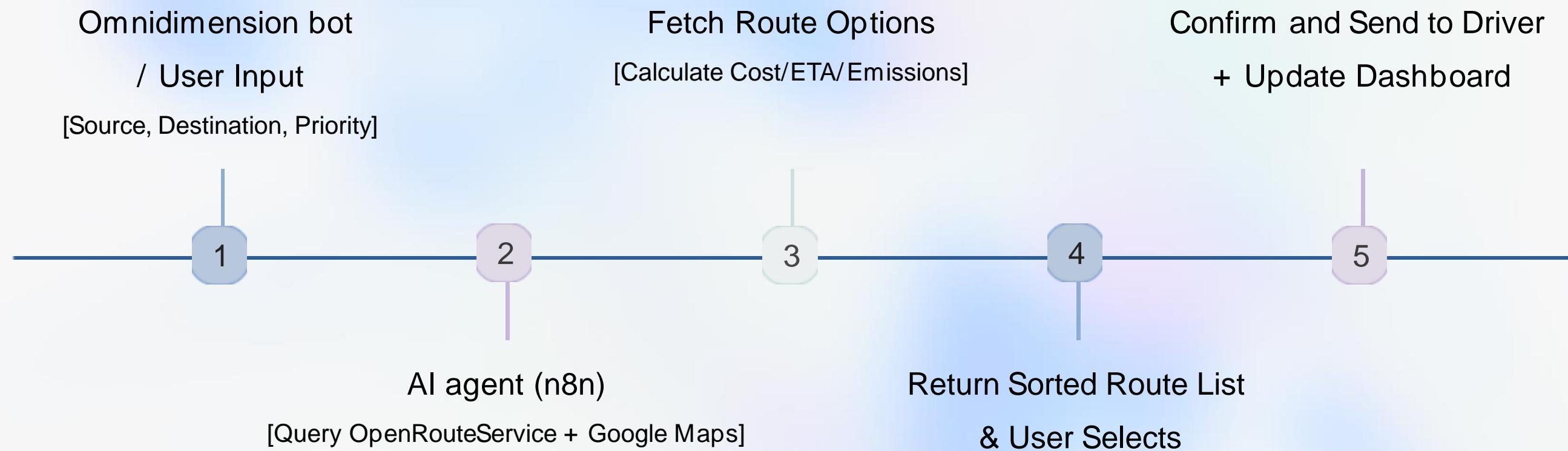
Inventory Spotter

Helps warehouse workers pick items faster and accurately



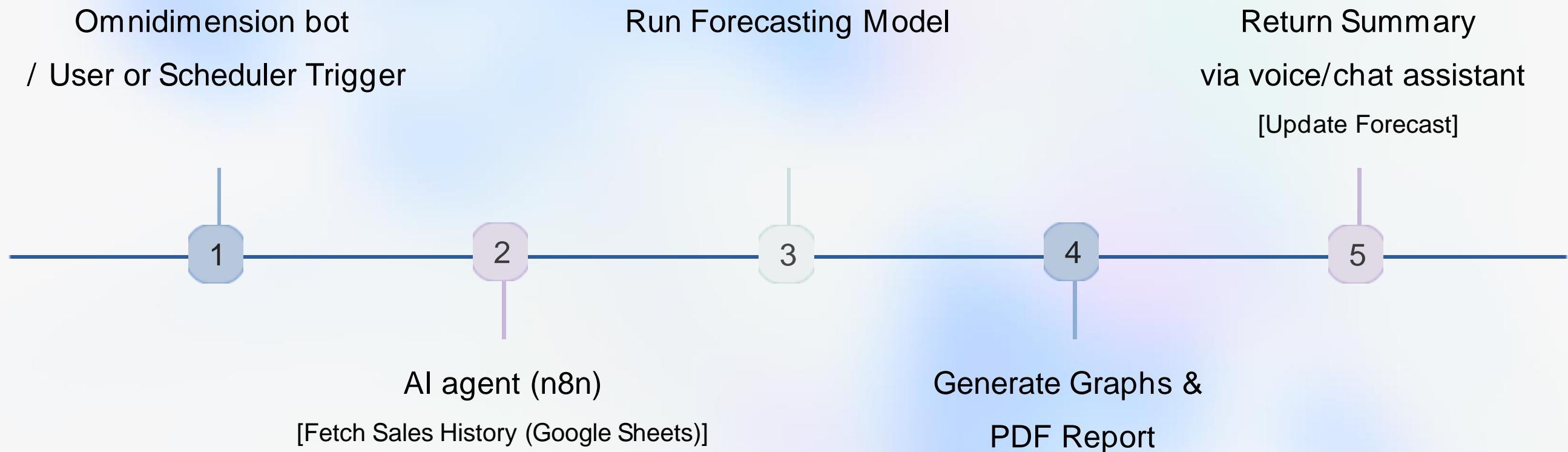
Route Optimiser

Finding the most efficient and cost-effective delivery path



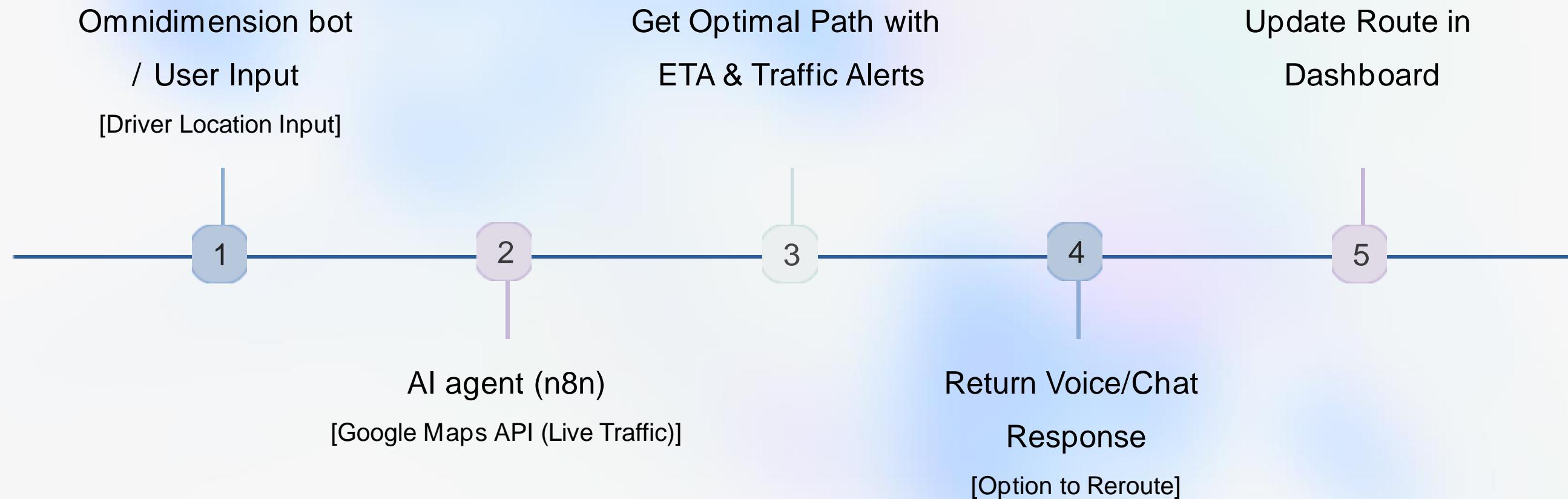
Demand Forecasting

Predict future customer demand using past data and trends



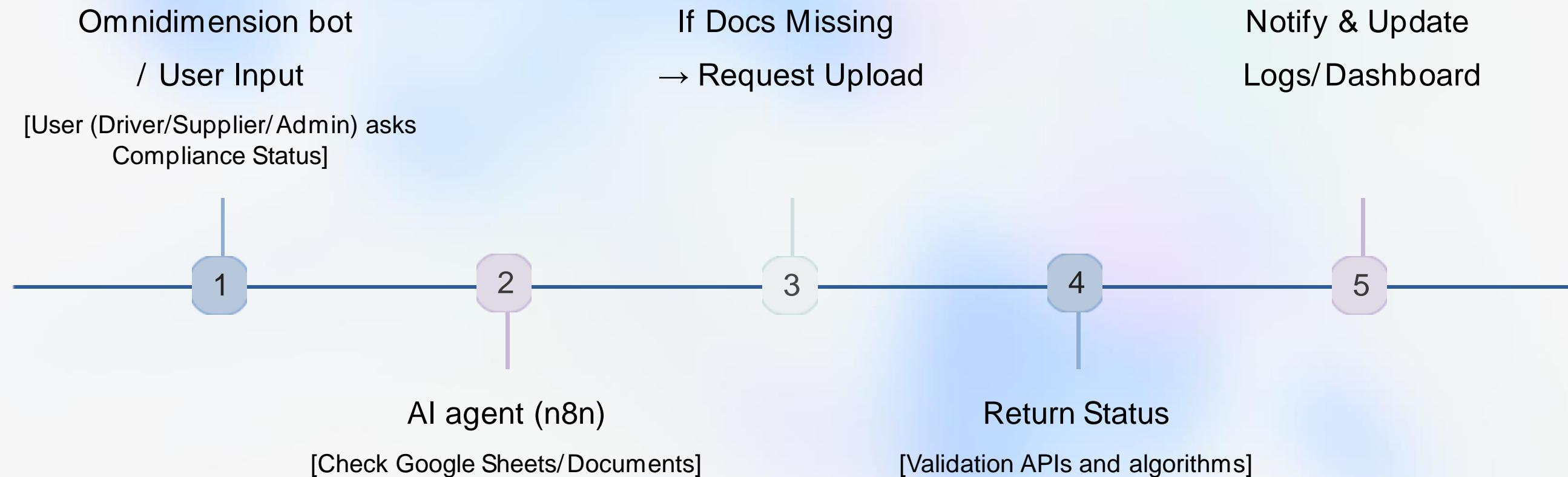
Traffic Whisperer

Predict future customer demand using past data and trends



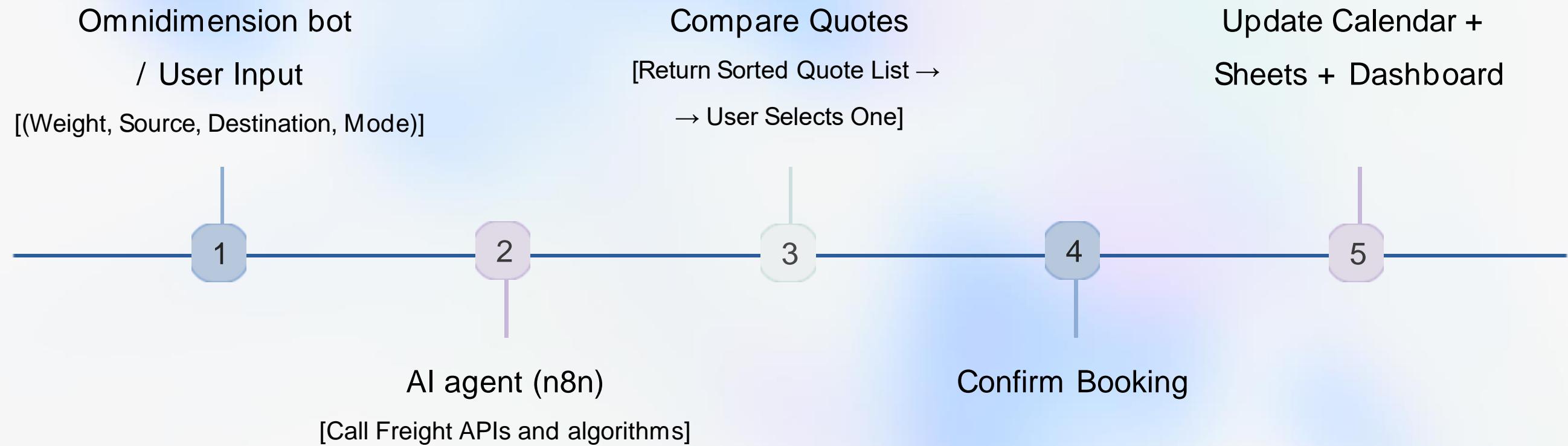
Compliance Checker

Predict future customer demand using past data and trends



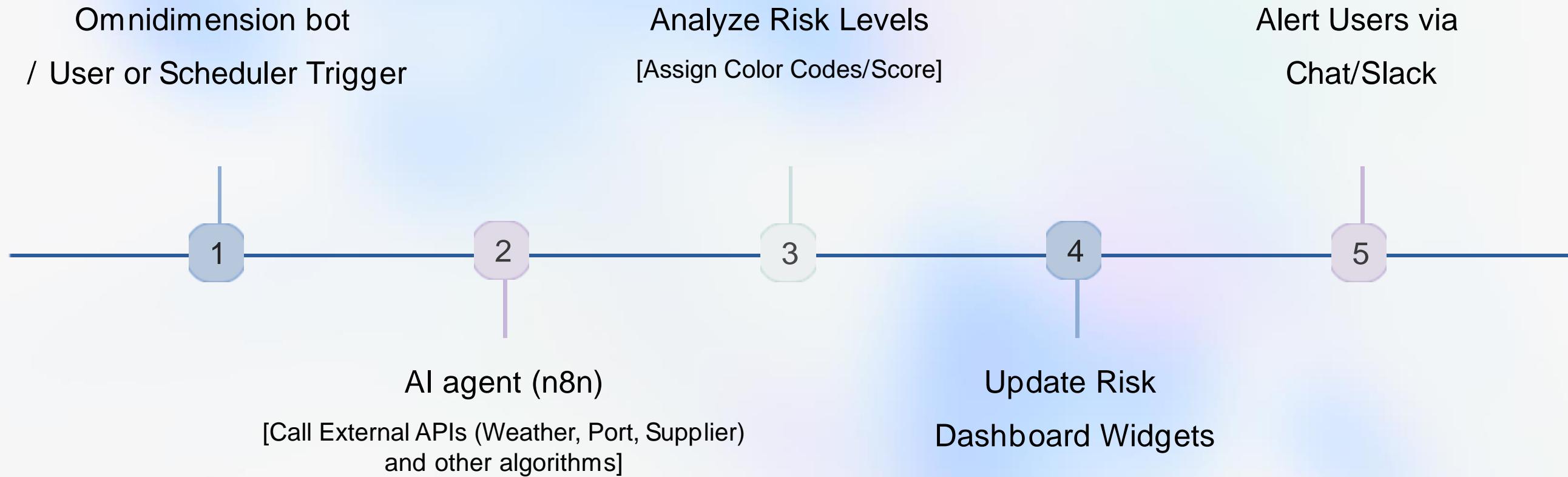
Freight Quotes

Predict future customer demand using past data and trends



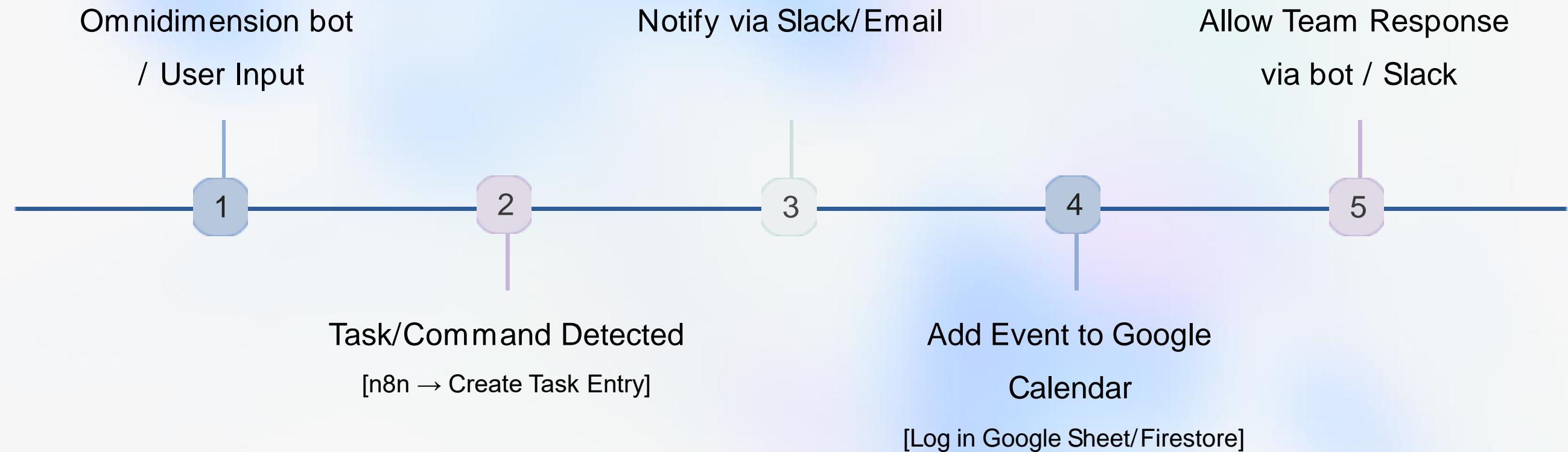
Risk Dashboard

Predict future customer demand using past data and trends



Team Collaboration

Predict future customer demand using past data and trends



Algorithms Involved

<u>Feature</u>	<u>AI/ML algorithm used</u>	<u>Purpose</u>
1. Dock Dispatcher	Rule-Based + Priority Scoring (Custom Logic) Optional: XGBoost Regressor	Assign dock slots based on urgency, truck type, ETA, etc.
2. Inventory Spotter	A* Pathfinding Algorithm	Route optimization for shortest pick path across warehouse grid
3. Route Optimizer	Rule-Based Logic A*/Dijkstra (for map graph) Optional ML for ETA/cost	Multi-modal route scoring & optimization (cost, carbon, time)
4. Compliance Checker	Rule-Based Validator Optional NLP (BERT/OCR)	Detect violations in parcel content, dimensions, restrictions

Technology Overview

Frontend - Typescript, Javascript

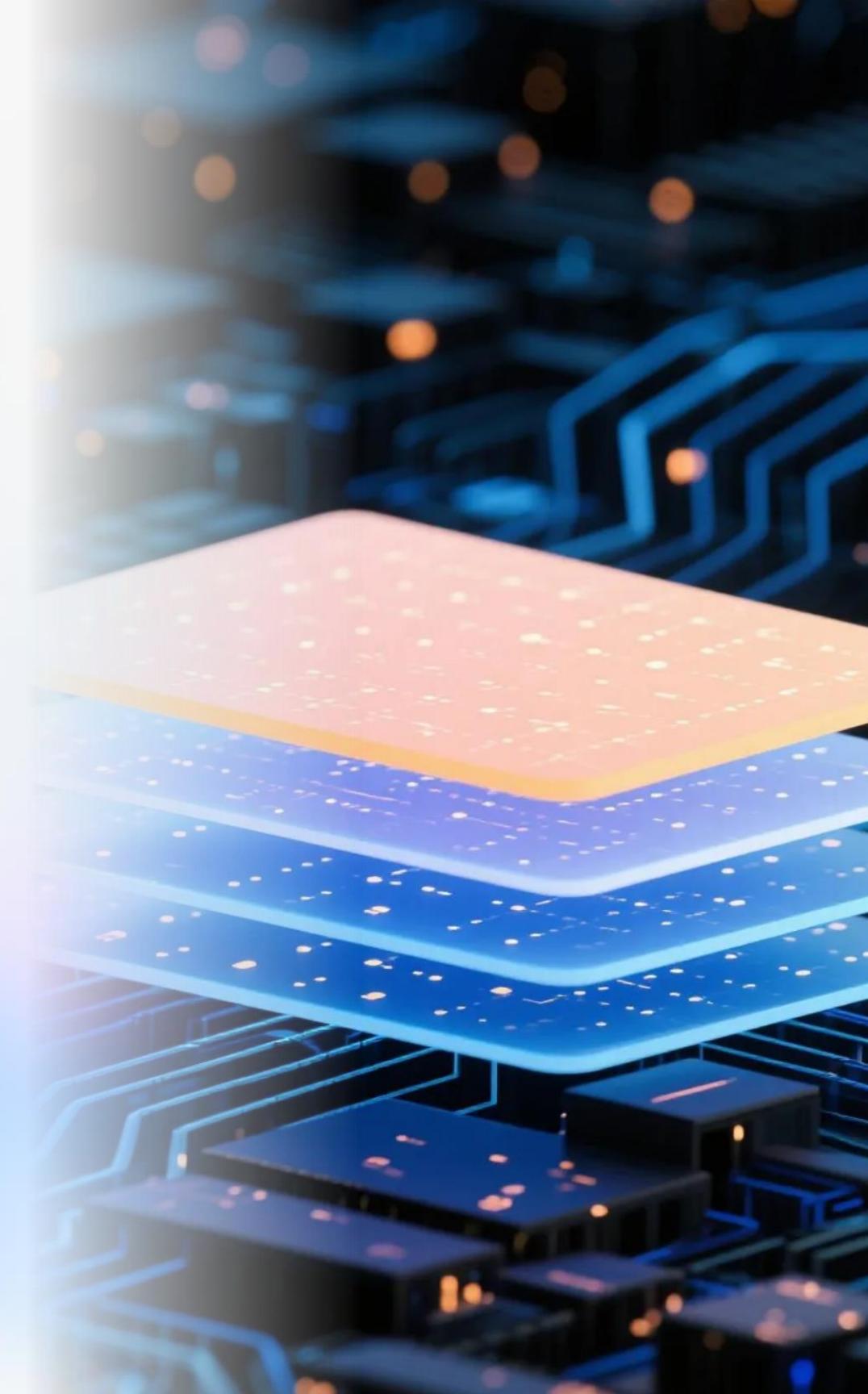
Authentication- Firebase

Backend- Node.js, Python

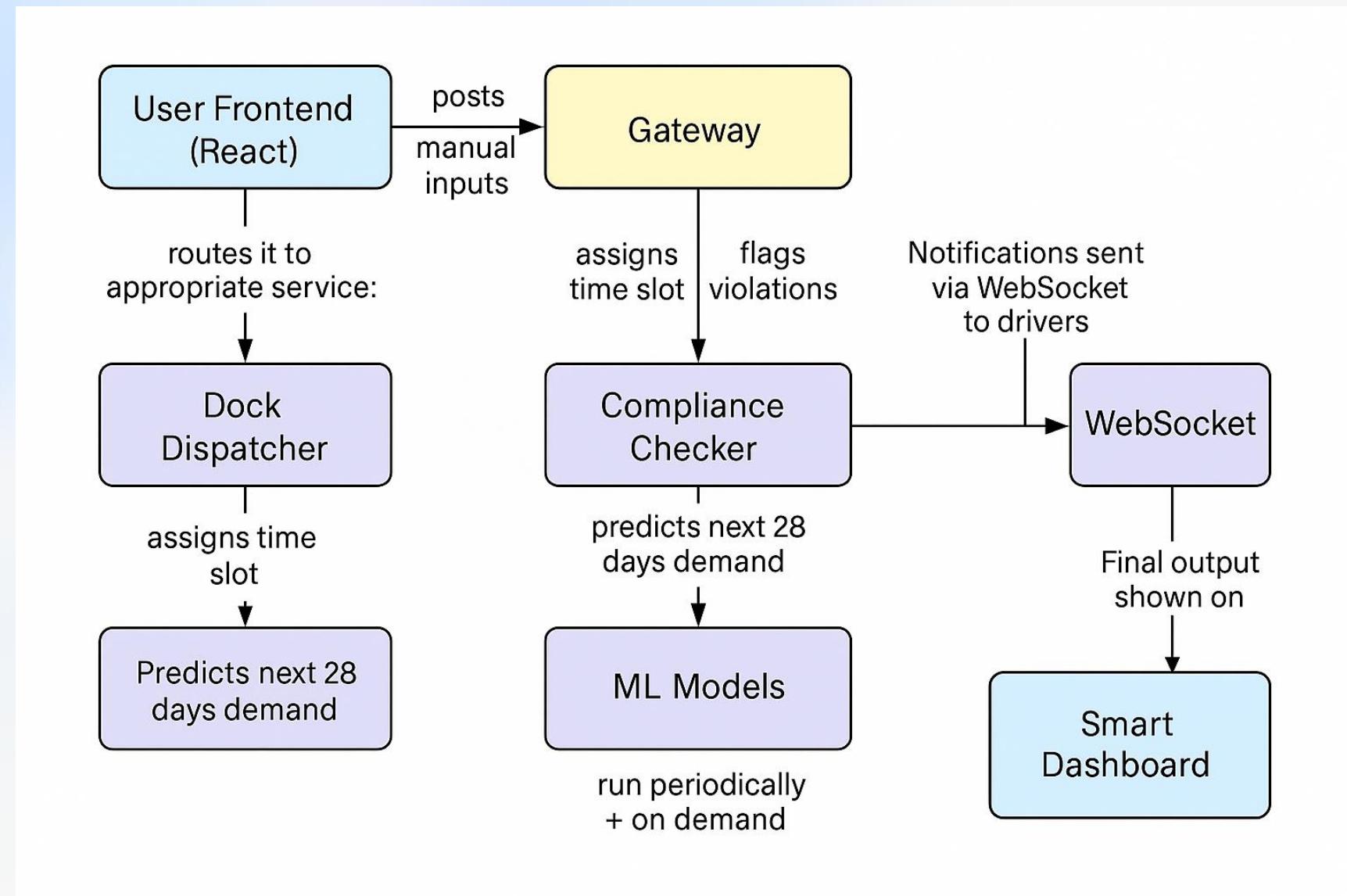
Database- MySQL(local)

AI agent- Omnidim SDK, n8n agents

Blockchain- hardhat, wagmi, Solana testchain



User Flow Diagram



Scalability and Security

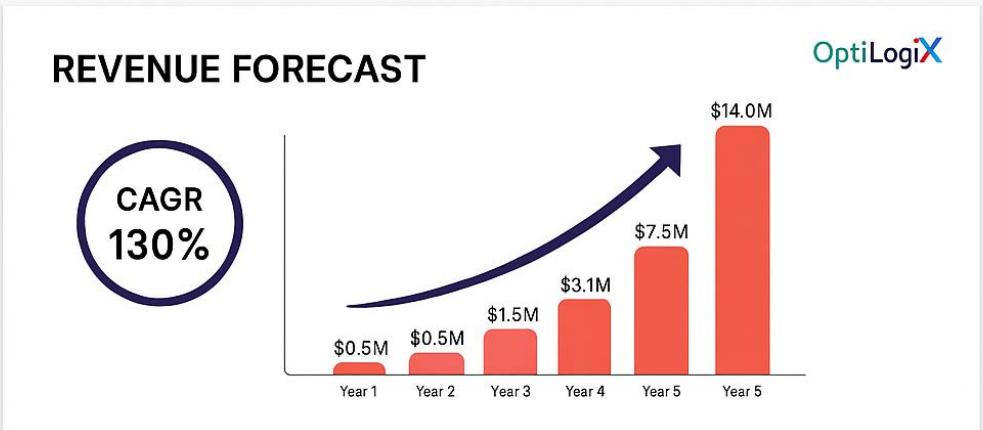
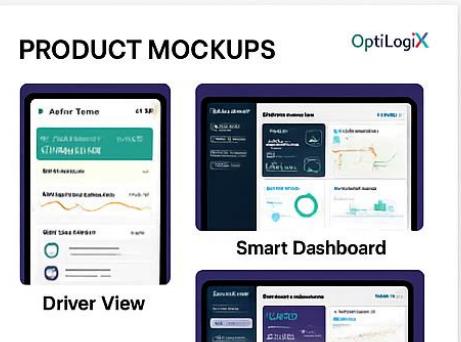
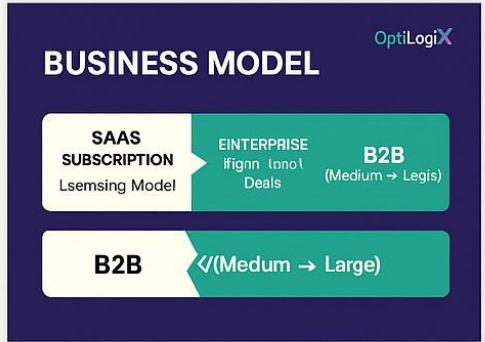
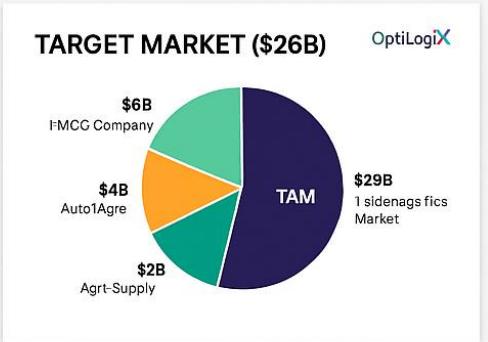
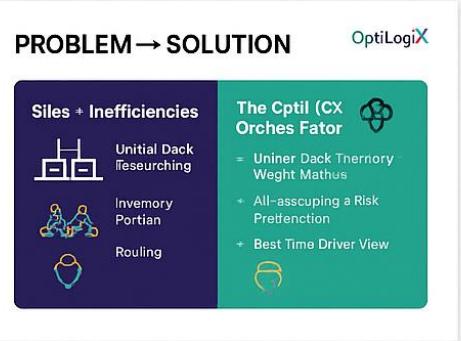
Scalability Strategies

Phase	Focus Area	Channels
MVP	SME warehouse pilots	Direct outreach, referrals
Scale-Up	D2C brands + ERPs	Tech partners, Shopify plugin
Suite Build	Add-on modules (Risk, Quotes)	SaaS bundling, marketplace APIs

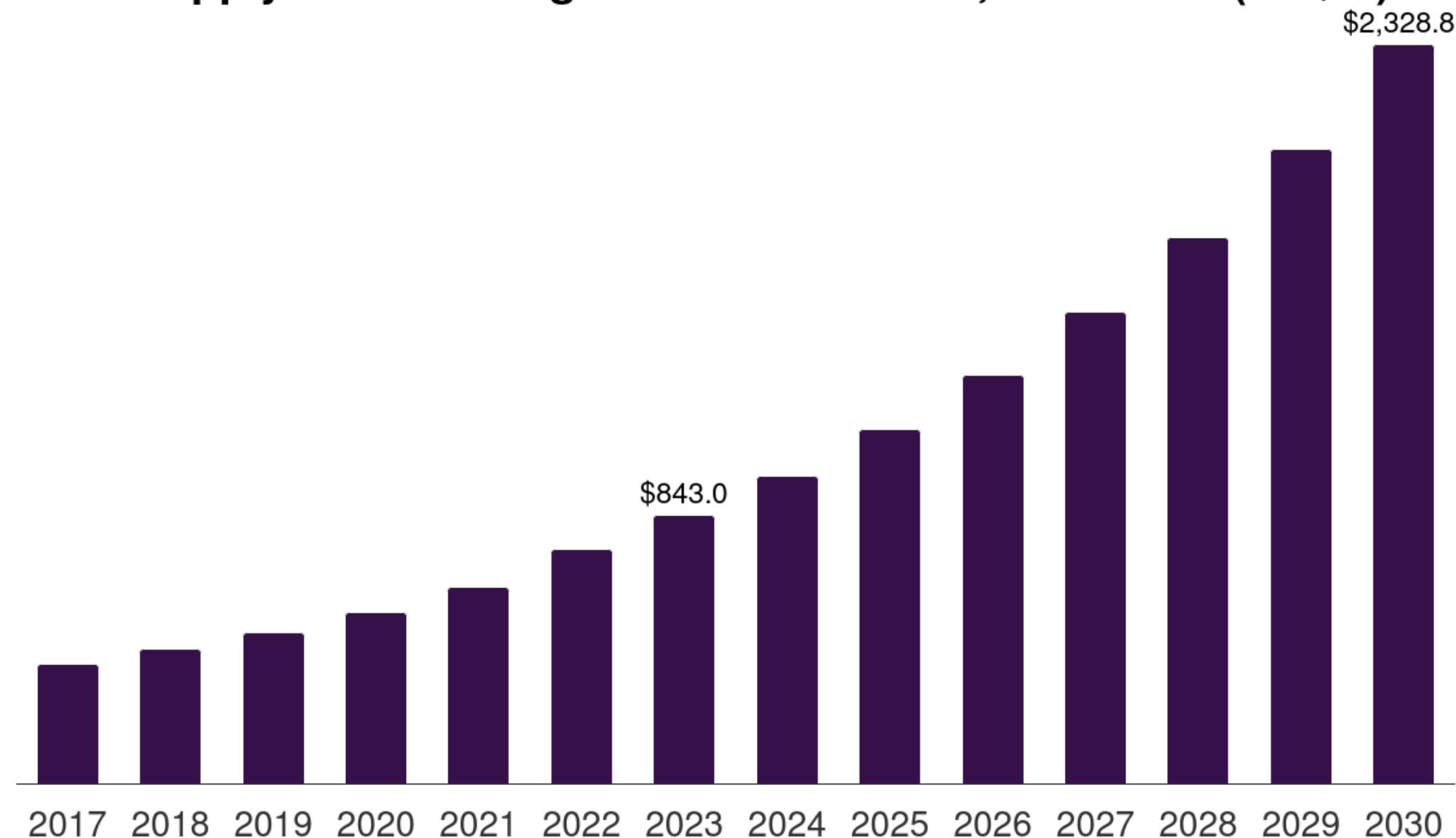
Security Measures

- Every compliance check, route dispatch, dock booking, etc., logged immutably (**Solana IPFS**).
- **Blockchain**

Business Plan Overview



India supply chain management market size, 2017-2030 (US\$M)



<https://www.grandviewresearch.com/horizon/outlook/supply-chain-management-market/india>

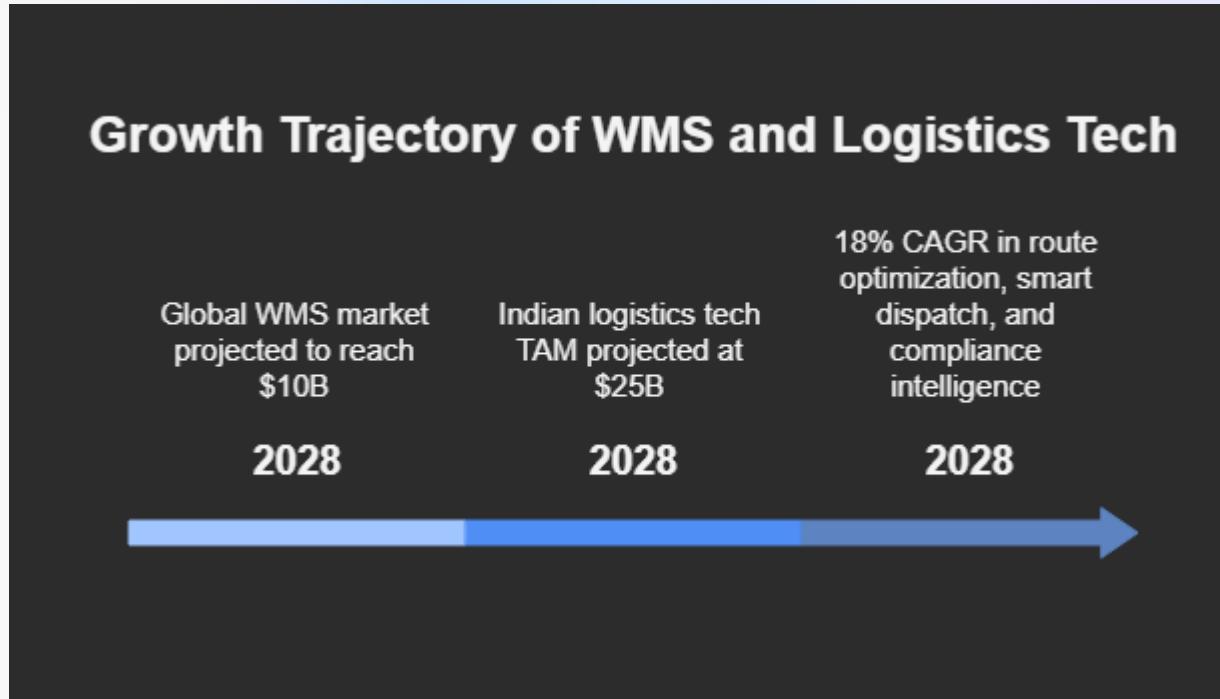


HORIZON
GRAND VIEW RESEARCH

15.6%

India Market
CAGR, 2024-2030

Target Market



Primary Market:

- **SME Warehouses & Fulfillment Centers** (India, SEA)
- **3PL Providers** scaling tech post-Series A

Secondary Market:

- **Large D2C Brands** (e.g., Meesho, Mamaearth) handling >100 orders/day
- **Retail Chains** with regional warehouses (e.g., Reliance Retail, BigBasket)

Role	Needs	Influence Level
Ops Manager	Reduce search time, improve SLAs	💧 High
Warehouse Owner	ROI and process standardization	💧 High
Pick Staff	Easy-to-use, accurate path assistance	⚠️ Medium
CTO / IT Manager	Integration with ERP & infra	💧 High

Product Differentiation

Capability	OptiLogiX	Legacy WMS	Barcode Apps
A Pathfinding*	✓	✗	✗
Real-time UI	✓	⚠	⚠
Modular Integration	✓	✗	✗
Plug-and-play Design	✓	✗	✓

Designed by
logistics+tech experts
with real warehouse
experience



Built with real AI pathfinding, not
rulesets

Modular, API-first platform

Positioning and Branding

OptiLogiX is positioned as the **AI-driven nerve center of logistics operations**—a modular platform integrating dock dispatch, route optimization

Brand Pillars:

- Simplicity: Minimal learning curve for warehouse workers.
- Speed: Fast integrations and real-time route generation.
- Connected: API-ready, compatible with major WMS/ERP.



Positioned as the plug-and-play **AI assistant for warehouse picking** — seamlessly integrating into any warehouse operation to **cut pick time, boost visibility, and enhance operational speed**.

Go-To-Market Strategy

- › Pilot 3–5 SME warehouses (3PLs, D2C)
- › Partner with ERP/WMS players (Zoho, NetSuite, Odoo)
- › Launch “OptiLogiX Lite” — white-labeled for regional logistics
- › Growth lever: TMS plug-ins + freight quoting APIs

Competitive Landscape

Platform	Inventory Spotter	Traditional WMS	Barcode Apps
A* Routing	✓	✗	✗
Visual Route Map	✓	⚠	✗
Live Inventory Feed	✓	✓	⚠
Modular API Design	✓	✗	✗
Manual + CSV Input	✓	✗	⚠
SaaS Setup	✓	✗	✓

Dock & Warehouse Scheduling

- Project44
- FourKites
- BlueYonder

Freight Quotation & Logistics Platforms

- Flexport
- Freightos
- Shiprocket X

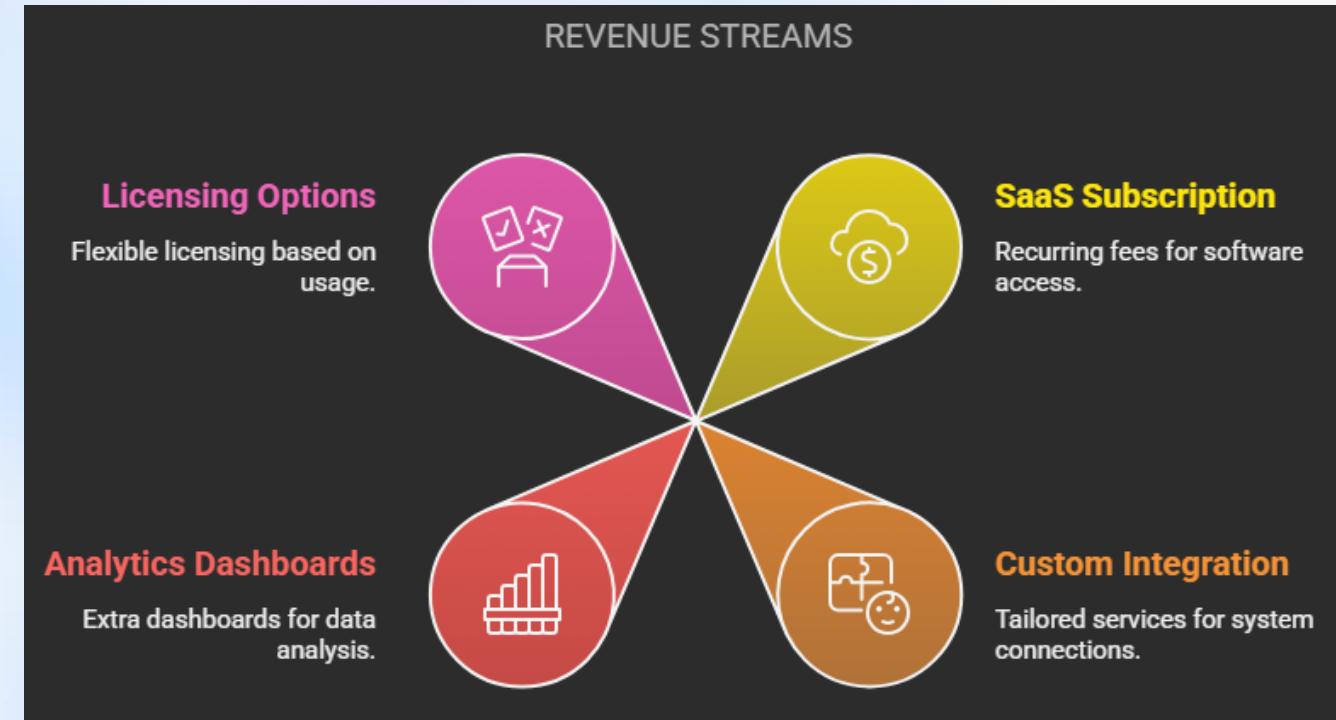
Inventory Optimization & Routing

- Zebra Technologies
- Locus.sh
- Fetch Robotics

Demand Forecasting

- Lokad
- ToolsGroup
- o9 Solutions

Revenue Model



Plan	Price	Features
Starter	\$99/month	1 warehouse, 2 users, basic scan + path tools
Pro	\$499/month	Up to 5 users, integration APIs, dashboard module
Enterprise	Custom	Unlimited users, smart assistant, full analytics & integration support

Distribution Strategy

Characteristic	Direct Sales	Channel Partners	Developer Community
 Target Audience	Warehouse ops leads & D2C brands	ERP Vendors, Logistics SaaS, Hardware sellers	Open API users, No-code integrators
 Sales Method	Inside sales, Targeted outreach	Partnerships, Platform integrations	Open API, Starter projects, Webinars

Technology and Innovation

AI/ML Algorithms:

- **A* Pathfinding** for warehouse maps
- **XGBoost** for demand prediction (Phase 2)
- **Rule-Based Compliance Engine** for packaging



Innovations:

- Real-time pick route generation
- Manual + API input flexibility
- Real-time alerts + pick time KPI tracking

Future AI Additions:

- Vision-based product scan (CV + OCR)
- Forecast-based dynamic zone allocation

Scaling , Growth Strategy and Risks and Challenges

Phase	Focus Area	Channels
MVP	SME warehouse pilots	Direct outreach, referrals
Scale-Up	D2C brands + ERPs	Tech partners, Shopify plugin
Suite Build	Add-on modules (Risk, Quotes)	SaaS bundling, marketplace APIs

Risk Type	Mitigation Strategy
Integration delays	Use plug-in connectors and no-code setup UI
User adoption	Simple UI, training videos, guided tours
Competition	Stronger UX, lower pricing entry point, modularity
Scaling warehouse ops	Flexible microservice setup with separate tenant DBs
Data security	Role-based access control, AES-encryption, ISO 27001 infra

Conclusion & Thank You