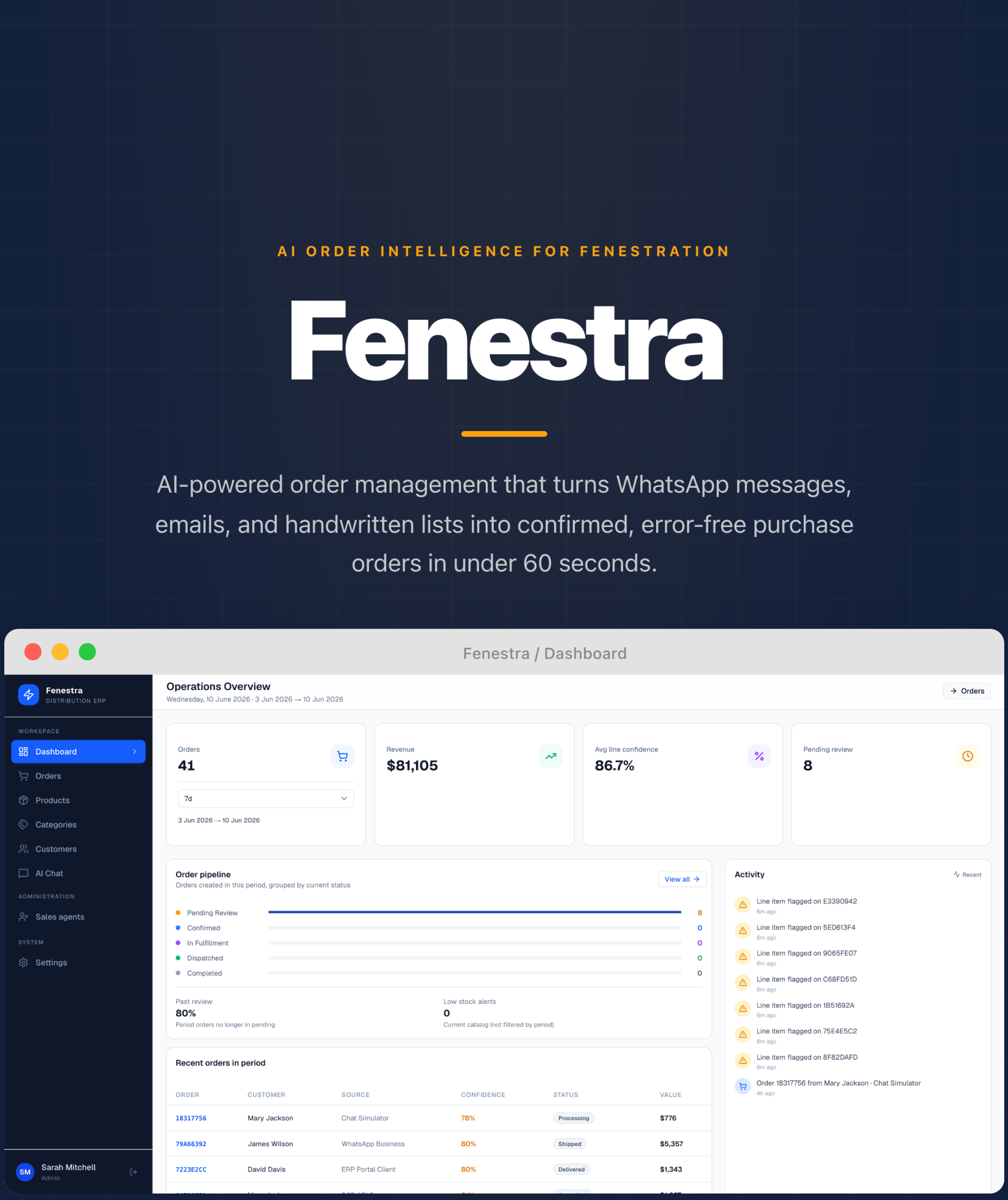
DIVESCALE CASE STUDY · 2026

Next.js TypeScript NestJS Claude

AI ORDER INTELLIGENCE FOR FENESTRATION

Fenestra

AI-powered order management that turns WhatsApp messages, emails, and handwritten lists into confirmed, error-free purchase orders in under 60 seconds.



DOMAIN

Fenestration / E-commerce / AI

CHAPTER 01 · THE PROBLEM

The Hidden Cost of Manual Orders

For fenestration distributors, every order arrives in a different format. Staff read emails, decode WhatsApp messages, and transcribe handwritten notes into ERP systems. The process is slow, error-prone, and unsustainable at scale.

1

Time Drain

Reading, searching, re-keying, and confirming each order consumes nearly half an hour of staff time.

2

Data Errors

Wrong SKUs, wrong quantities, and wrong specifications slip through manual entry and reach the job site.

3

Missed Leads

After-hours inquiries go unanswered. Contractors call competitors when your team is offline.

PROBLEM	BEFORE	IMPACT
Average time per order	**28 minutes**	**18+ hours/day for 40 orders**
Error rate	**1 in 12 (8.3%)**	**Wrong specs reach job sites**
After-hours response	**66%**	**34% of leads never answered**

CHAPTER 02

How It Works
Three Steps. Under Sixty Seconds.

From a messy contractor message to a confirmed draft order. No special format required. No human in the loop until the final review.

01

Contractor Sends Anything

Email, WhatsApp, PDF quote, or a photo of a handwritten list. No portal. No special format. They do what they already do.

02

AI Reads and Matches

Understands the request, matches every item to your SKU catalog, and flags ambiguous items with suggestions. Never silently enters wrong data.

03

Order Lands in Your System

A clean, structured order appears in under 60 seconds. High-confidence items ready to confirm. Flagged items show best guess and alternatives.

FEATURE 01 · INPUT

Reads Anything You Send

Contractors communicate in whatever format is convenient. Before Fenestra, that meant staff manually transcribed emails, deciphered WhatsApp shorthand, and retyped handwritten notes. Each format required a different handling routine.

BEFORE

Staff manually transcribed emails, deciphered WhatsApp shorthand, and retyped handwritten notes. Each format required a different handling routine.

PAIN

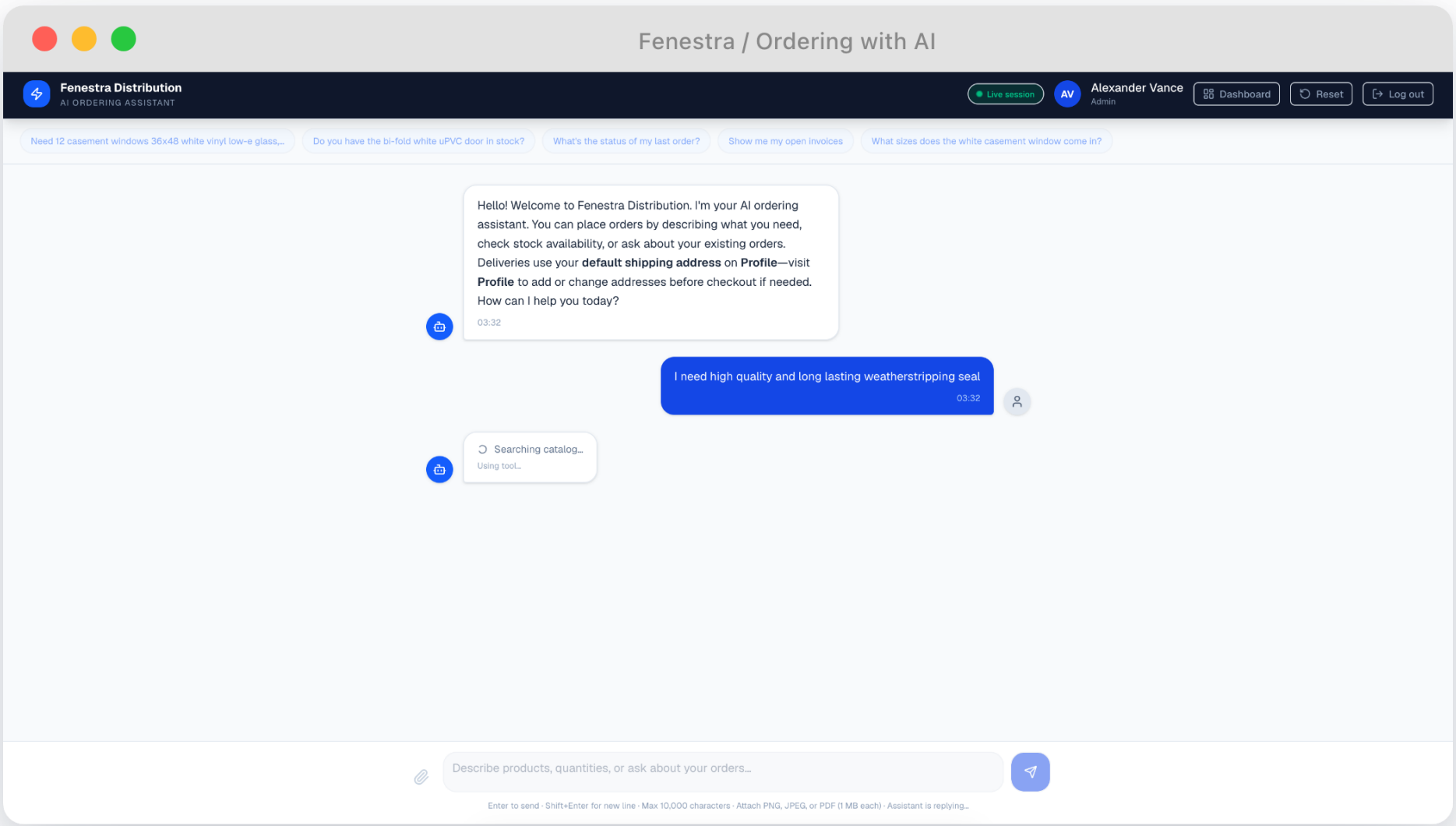
Inconsistent handling meant some formats were deprioritized. Photos of handwritten lists were often ignored until the end of the day.

SOLUTION

Fenestra reads typed messages, PDF quotes, Word documents, and photos of handwritten lists without any change to how contractors communicate.

OUTCOME

All inbound channels are treated equally. A WhatsApp message and a scanned PDF receive the same structured output in under 60 seconds.



FEATURE 02 · MATCHING

Semantic SKU Matching

Contractors rarely use exact product codes. They say "low-e glass," "energy glass," or "thermally efficient glazing." Before Fenestra, staff had to interpret every description and manually cross-reference the catalog.

BEFORE

Staff interpreted every description and manually cross-referenced the catalog. Abbreviations and nicknames slowed every order.

PAIN

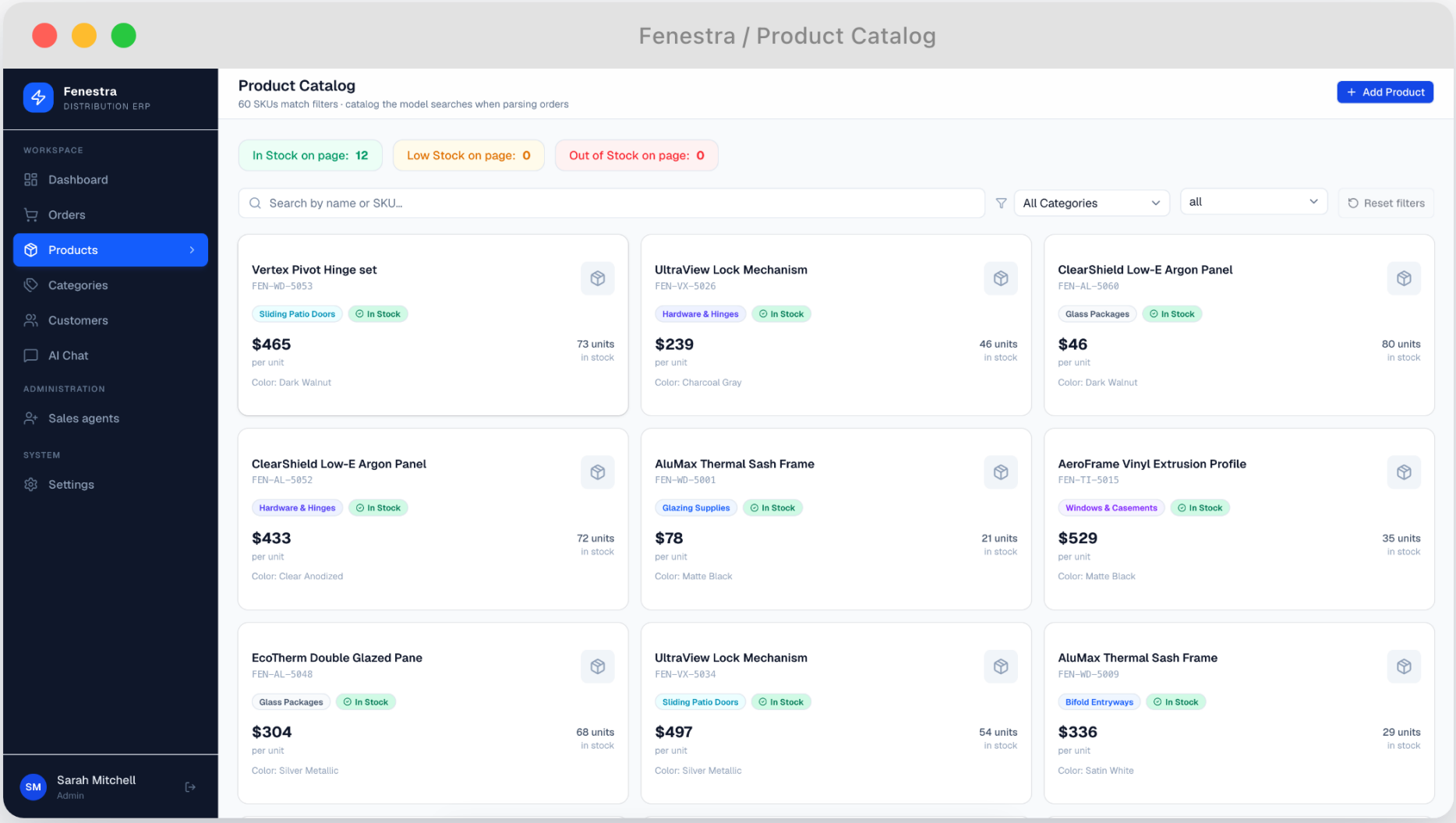
With 25,000+ SKUs, even experienced staff misidentified products. A wrong match meant wrong specs at the job site and costly returns.

SOLUTION

Semantic matching understands natural language descriptions and maps them to the correct SKU regardless of terminology or abbreviation.

OUTCOME

"Low-e glass," "energy glass," and "thermally efficient glazing" all resolve to the same product instantly and accurately.



FEATURE 03 · ACCURACY

Intelligent Flagging

Silent errors are the most expensive kind. Before Fenestra, ambiguous items were guessed at and entered into the system without confirmation. Errors were only discovered at the job site or during dispatch.

BEFORE

Ambiguous items were guessed at and entered without confirmation. Errors were only discovered at the job site or during dispatch.

PAIN

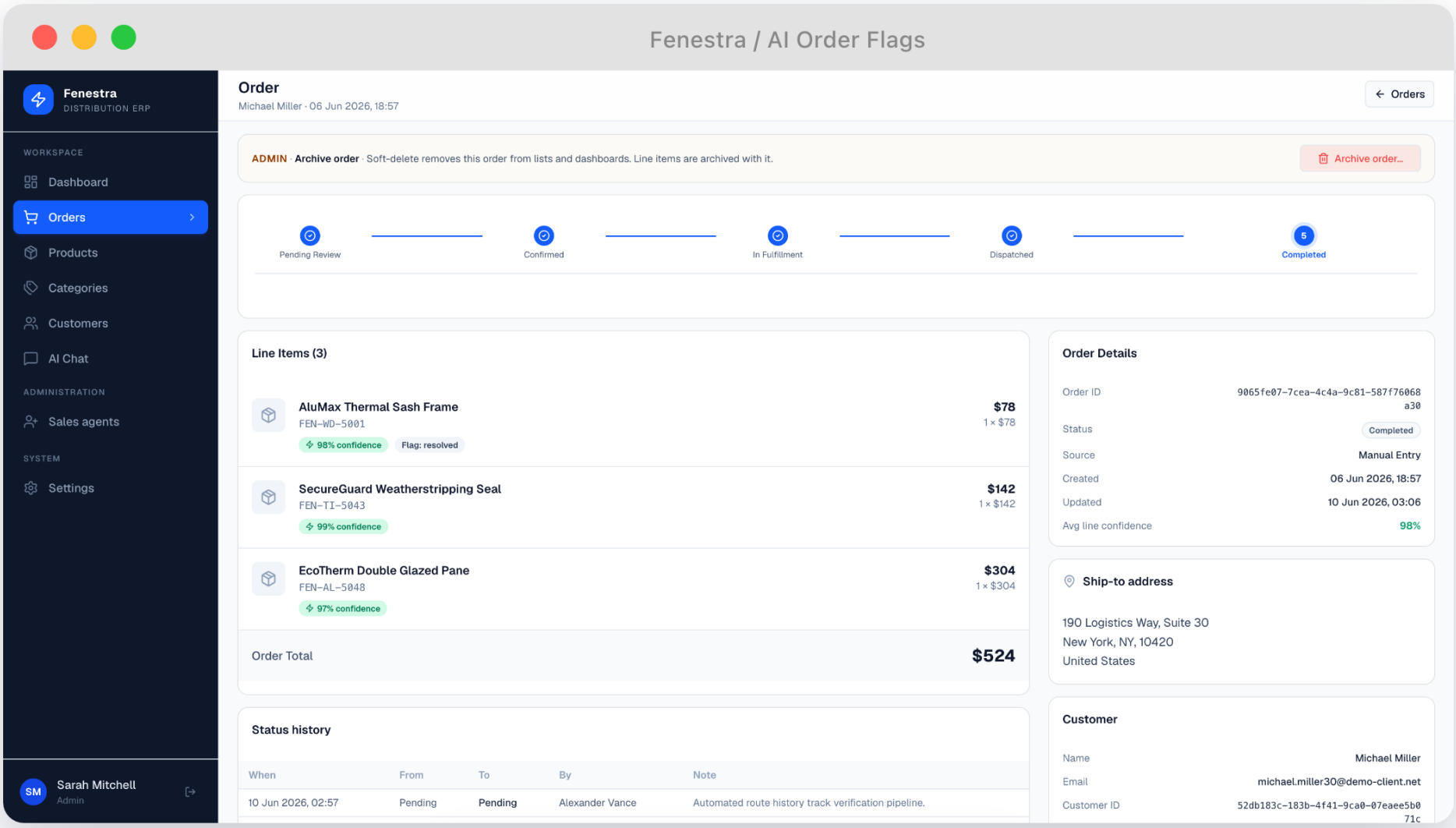
The 1 in 12 error rate meant weekly returns, re-orders, and strained contractor relationships. Each correction consumed more staff time.

SOLUTION

Uncertain items are flagged immediately with the AI's best guess and a list of alternatives. Staff review only what needs a human eye.

OUTCOME

Error rate dropped from 8.3% to approximately 1%. Staff time is spent confirming exceptions, not re-checking entire orders.



FEATURE 04 · AVAILABILITY

24/7 Contractor Self-Service

Contractors do not keep office hours. Before Fenestra, 34% of after-hours inquiries went unanswered. Leads went cold. Orders were delayed. Competitors with faster response times won the business.

BEFORE

After-hours inquiries sat in inboxes until morning. Contractors calling at 6 PM or on weekends received no response.

PAIN

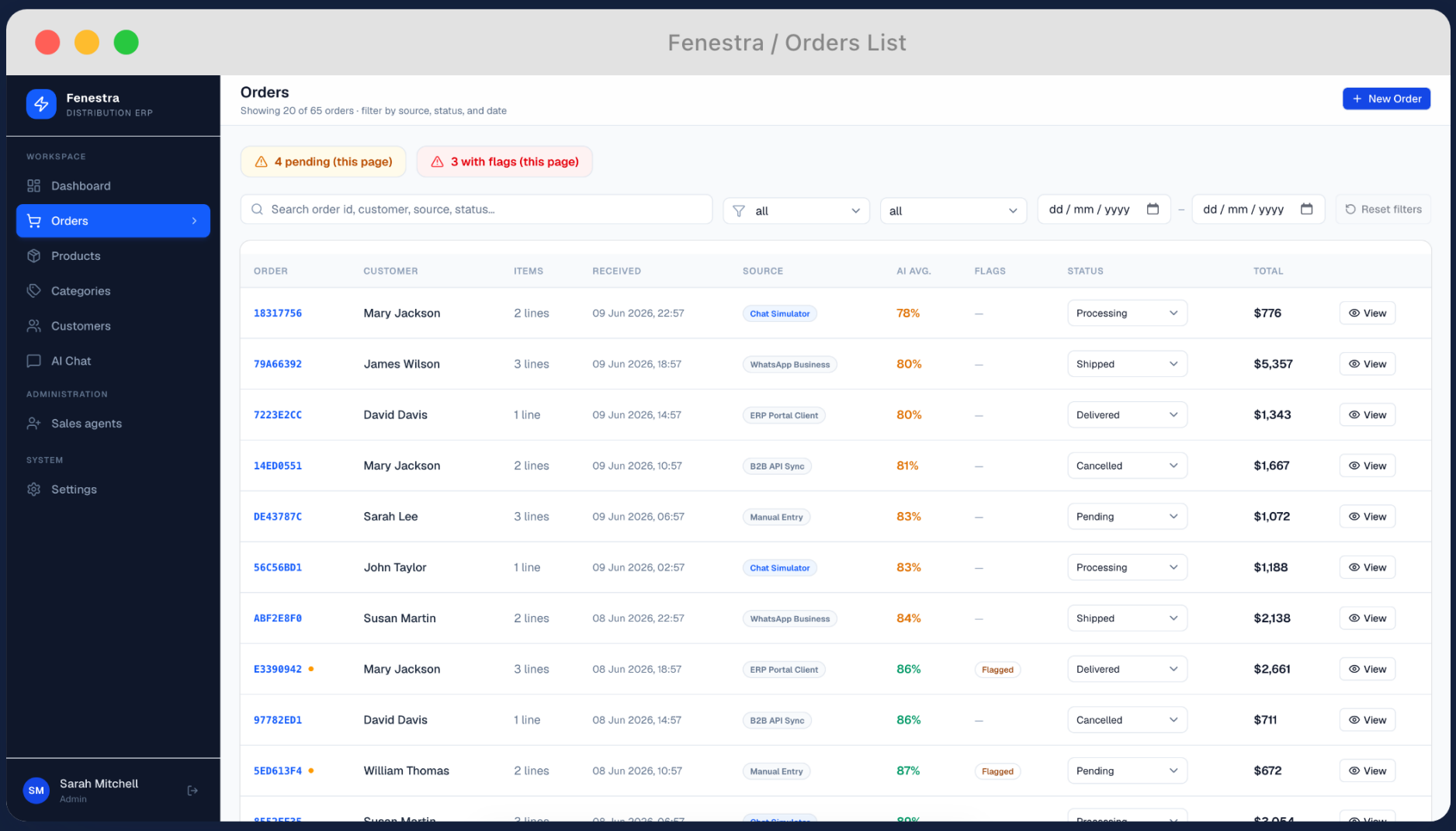
Leads went cold. Orders were delayed. Competitors with faster response times won the business. That 34% gap was lost revenue.

SOLUTION

A conversational AI chat interface lets contractors check order status, stock availability, and invoice history at any hour.

OUTCOME

Zero missed leads after hours. Inbound status calls dropped 40%. Contractors self-serve without calling your team.



FEATURE 05 · INVENTORY

Live Inventory Awareness

Taking an order for an out-of-stock item creates a cascade of problems. Before Fenestra, stock levels were checked manually after the order was already entered. Backorders and substitutions were handled reactively.

BEFORE

Stock levels were checked manually after the order was already entered. Backorders and substitutions were handled reactively.

PAIN

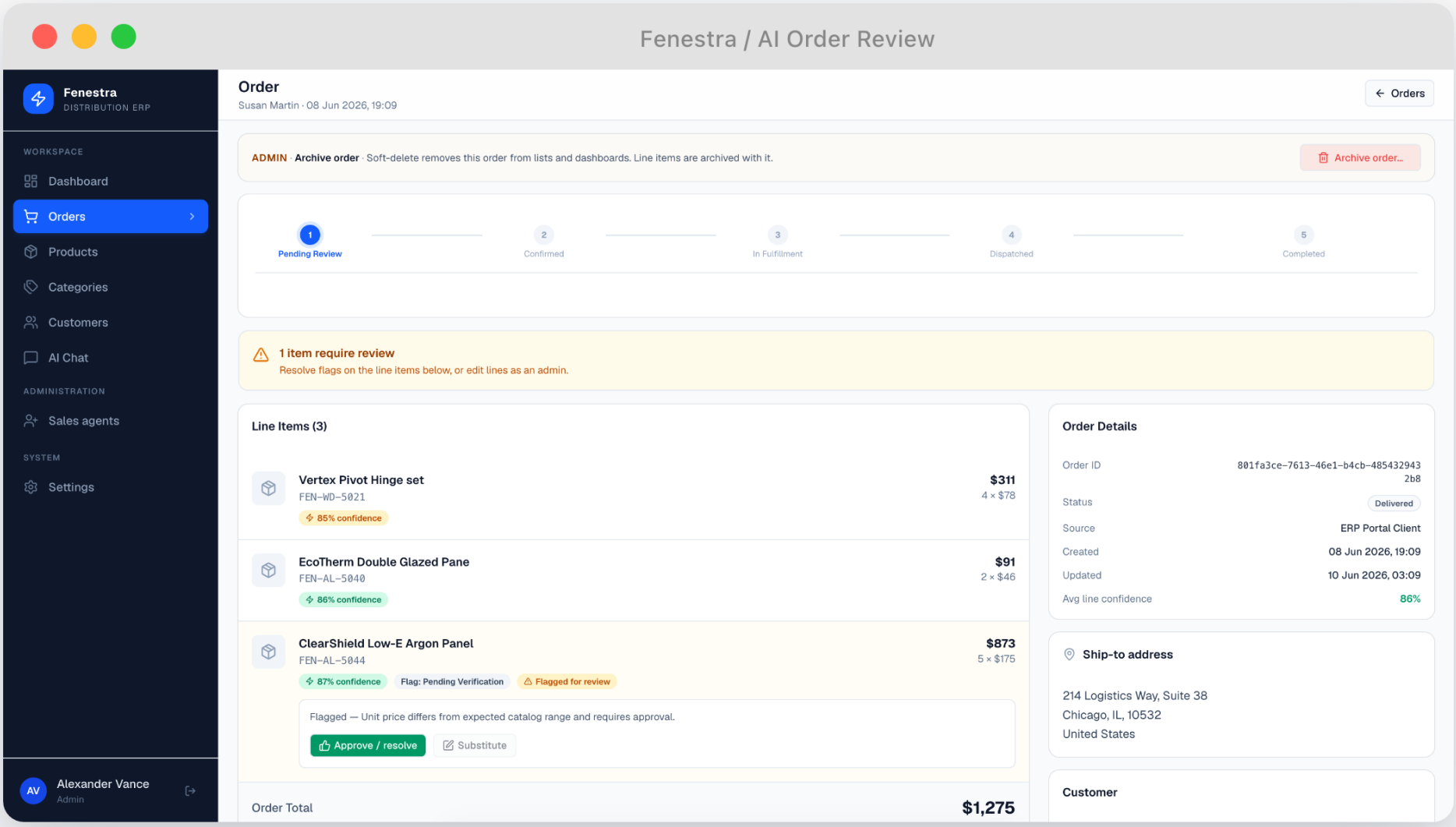
Contractors received confirmations for items that were not available. Delivery delays damaged trust and repeat business.

SOLUTION

The AI queries real-time stock levels as it processes the order. If an item is unavailable, it says so immediately and suggests alternatives.

OUTCOME

Orders are accurate before dispatch. Contractors are never surprised by stockouts. Suggested alternatives speed up decision-making.



CHAPTER 03 · VERIFIED IMPACT

What Changes on Day One

For a typical distribution team processing 40 orders per day, the operational transformation is immediate and measurable.

DATA ENTRY TIME

97%

Reduction in manual entry time

AFTER-HOURS LEADS

Zero

Missed leads from unanswered inquiries

STAFF THROUGHPUT

3×

More orders per staff member

METRIC	BEFORE	AFTER	IMPROVEMENT
Processing time per order	**28 min**	**90 sec**	**97% reduction**
Error rate	**8.3%**	**~1%**	**7.3% fewer**
Cost per order	**£8–15**	**£1–2**	**£6–13 saved**
After-hours response	**66%**	**100%**	**Zero missed**
Inbound status calls	**Baseline**	**40% fewer**	**Self-serve chat**

TECHNOLOGY

Built for Speed, Scale, and Intelligence

A modern stack engineered for real-time AI order processing, semantic search across 25,000+ SKUs, and reliable multi-tenant deployment.

- Next.js
- React
- TypeScript
- Tailwind CSS v4
- NestJS
- PostgreSQL
- TypeORM
- BullMQ / Redis
- Docker
- PNPM Monorepo
- OpenRouter
- Langchain
- Claude (Anthropic)
- Railway
- Cloudflare

RESULT

From Manual Chaos to Order Intelligence

Fenestra transforms how fenestration distributors handle orders. Contractors send messages the way they always have. The AI reads, matches, and structures every order in under 60 seconds. Your team reviews exceptions, not entire orders.

A DIVESCALE CASE STUDY · 2026