

AI Customer Support Resolution System

Detailed Client Brief | Automated support operations with AI, verified business data, human review, and lifecycle monitoring

Business Challenge

Customer support teams often spend valuable time reading and categorizing emails, checking customer and order records, searching internal policies, writing repetitive replies, escalating unresolved cases, and remembering when to follow up. As ticket volume grows, these manual steps can lead to slower responses, inconsistent handling, missed cases, and limited visibility into service levels.

Proposed Solution

Project 043 provides an end-to-end support automation system built around four connected workflows. It handles routine support work automatically while using verification rules, policy-grounded AI, and human-review paths to keep higher-risk decisions controlled. PostgreSQL maintains the case lifecycle across workflows so each ticket remains traceable from first contact through resolution and closure.

What the System Handles

Capability	How It Helps the Business
AI ticket intake & classification	Reads inbound support email, identifies the issue, urgency, sentiment, and route, then creates a structured support ticket.
Customer & order verification	Checks customer identity, order existence, and ownership before order-related automation is allowed to continue.
Knowledge-grounded resolution	Retrieves the relevant support policy and uses it with verified case data to generate a more controlled customer response.
Human review & escalation	Routes uncertain, sensitive, low-confidence, or unverified cases to support staff through Slack instead of forcing an AI decision.
SLA monitoring & follow-up	Checks active cases on a schedule, escalates overdue tickets, follows up with customers, and closes eligible completed cases.

Business Benefits

- Faster and more consistent handling of incoming support requests.
- Less repetitive triage, database lookup, policy search, routing, and follow-up work for support staff.
- Reduced risk of forgotten tickets through scheduled SLA monitoring and escalation.
- Safer use of AI through verified customer/order context, retrieved policy, structured outputs, and human review.
- Persistent support records that can later support dashboards, reporting, CRM synchronization, and performance analysis.

Solution Scope

Core stack: n8n for orchestration; PostgreSQL for ticket/customer/order state; LLMs with structured output for classification and resolution; vector retrieval with embeddings for support knowledge; Gmail for customer communication; Slack for staff alerts and escalations.

Typical production customization: connect the client's real support inbox or help desk, CRM/order system, internal policies, response templates, SLA targets, escalation rules, staff roles, and approved automated actions. The demonstrated NovaCart environment is a simulated business implementation used to validate the architecture.

Client outcome: routine support work moves automatically, exceptions reach the right person, and each case remains tracked from the first customer message through resolution, follow-up, and final closure.