

CASE STUDY

RMI Heating and Air Conditioning

AI-Powered Inbound Voice Agent — Lisa

Watch Case Study video on youtube: https://youtu.be/YRW_cFigbfQ

CLIENT RMI HVAC	AGENT NAME Lisa	PLATFORM Retell + n8n	CALL TYPE Inbound Service Calls
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Project Overview

RMI Heating and Air Conditioning is a certified HVAC contractor serving Orlando, FL and surrounding Central Florida communities — including Kissimmee, Winter Park, Sanford, Apopka, and Clermont — since 2006. They offer a full range of residential and commercial HVAC services: AC repair, installation, maintenance tune-ups, heating systems, ductwork, air quality solutions, and 24/7 emergency service.

As inbound call volume grew, RMI's office team struggled to consistently handle every call — especially after hours, during peak summer demand, and when technicians were all deployed in the field. The solution was Lisa — an AI-powered inbound voice agent built on Retell and orchestrated via n8n — designed to handle service inquiries, guide callers through basic troubleshooting, book appointments, and escalate real emergencies to a live technician instantly.

Problem Statement

RMI's front-office team faced four recurring challenges with inbound calls:

- Missed after-hours calls — calls that came in evenings, weekends, or during peak demand were lost, costing RMI booked appointments and potential long-term customers.
- Inconsistent intake — different staff collected customer details in different ways, leading to incomplete service records, missing addresses, and repeat callbacks.
- No triage system — every call went to the same queue regardless of urgency, meaning a routine tune-up inquiry blocked a potential emergency escalation.
- No automated logging — completed calls weren't automatically written to a CRM or database, making it impossible to track issue history, customer preferences, or technician scheduling patterns.

Solution

We built Lisa — a conversational AI voice agent deployed on Retell — to handle all inbound service calls on behalf of RMI. Lisa greets every caller naturally, identifies whether the issue is a true emergency or a standard service request, walks callers through basic troubleshooting when appropriate, books technician appointments, and automatically logs every completed call to Google Sheets.

KEY PRINCIPLE

Lisa sounds like a real, relaxed HVAC receptionist — not a phone tree. Responses are kept to one or two sentences. One question is asked at a time. Emergencies like gas smells, burning odors, or sparking units are escalated immediately to a human technician — no troubleshooting, no delay.

The Voice Agent — Lisa

Lisa is designed around a single principle: handle service calls the way an experienced, calm receptionist would — with empathy, clarity, and no unnecessary friction. The system prompt enforces strict one-question-at-a-time rules and prohibits jumping straight into troubleshooting before the customer has had a chance to explain their situation fully.

The call flow follows a deliberate structure:

1	Greeting & Intent Discovery	Lisa answers warmly and naturally, then listens fully before asking any questions. The caller describes their situation; Lisa acknowledges and identifies whether it's an emergency, a repair request, a maintenance inquiry, or a general question.
2	Triage & Emergency Override	If the caller mentions gas smell, burning, smoke, sparking, or any safety risk — Lisa skips troubleshooting entirely, acknowledges urgently, and immediately transfers to a live technician via <code>transfer_call</code> . No delays, no scripts.
3	Troubleshooting (with Permission)	For non-emergency issues, Lisa asks the customer's permission before attempting any phone-based troubleshooting. Steps are delivered one at a time: check the thermostat, check the breaker, check the filter. Lisa waits for feedback before proceeding.
4	Booking Flow	If troubleshooting doesn't resolve the issue — or the customer prefers a technician — Lisa checks availability via <code>check_availability_cal</code> , offers two time slot options, and collects name, address, and email to book the appointment.
5	Post-Call Logging	When a call ends, Lisa's structured outputs — customer name, email, phone, address, and issue description — are automatically written to Google Sheets via an n8n post-call webhook. Every call builds the database for future interactions.
6	Closing	Lisa closes naturally and warmly, with varied sign-offs each call. When the caller says goodbye, Lisa wishes them a good day by name.

n8n Automation Backend

The backend consists of two core automation layers: inbound call handling and post-call data capture.

1 — Inbound Call Webhook

When Retell receives an inbound call, it fires a POST request to the n8n webhook endpoint. The workflow:

- Receives caller phone number and call metadata from Retell
- Looks up the phone number against the RMI customer database in Google Sheets
- If a returning customer is found: injects firstName, email, address, and previous issue history as dynamic variables into Lisa's live session
- If no record exists: Lisa proceeds with a clean new-customer intake flow

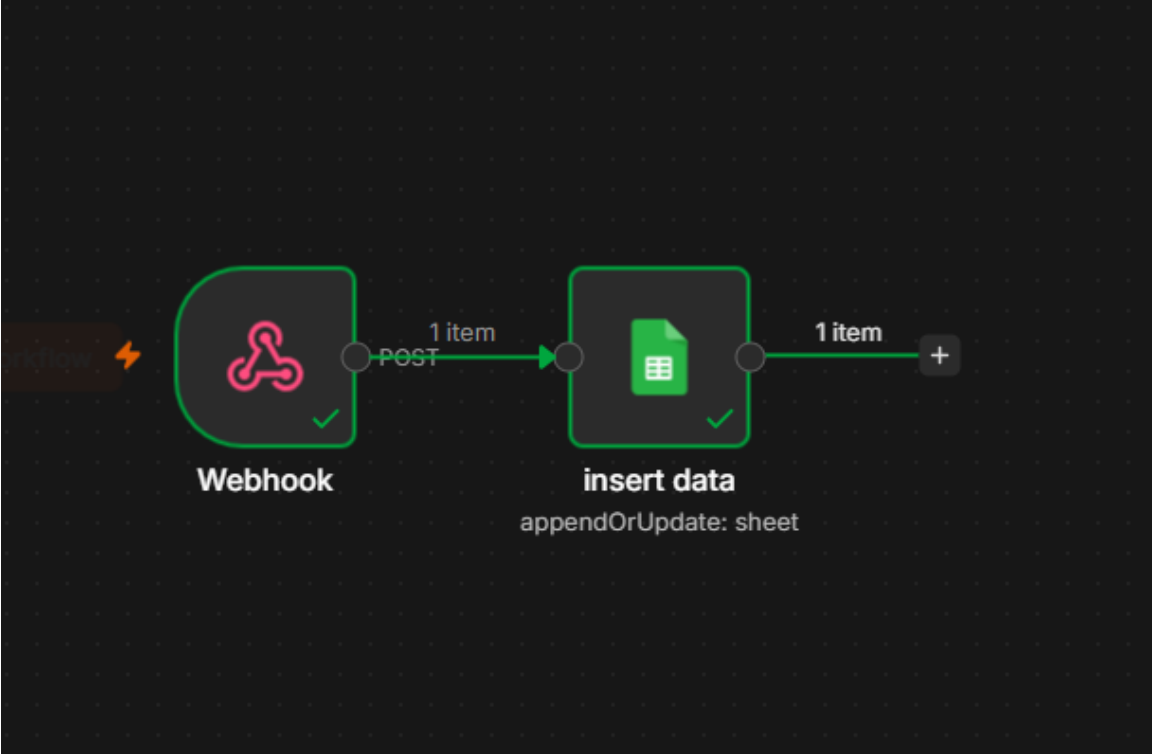
This lookup happens before Lisa says her first word — so returning customers are greeted by name and don't need to repeat their address or history.

2 — Post-Call Data Logging

When a call ends, an n8n workflow captures Lisa's structured outputs and writes them to Google Sheets using an appendOrUpdate operation matched on phone number. Fields logged include:

- Customer name, email, and phone number
- Service address
- Issue description and call outcome

This closes the loop: every completed call feeds the recognition system that powers future returning-customer lookups, building RMI's customer database automatically with zero manual entry.



3 — Appointment Booking via Calendar

When a technician visit is needed, Lisa calls `check_availability_cal` to pull real-time open slots, presents two options to the caller, and calls `book_appointment_cal` once a time is confirmed. Customers receive a confirmation with the technician's expected arrival window.

4 — Human Escalation

For true emergencies or when a caller explicitly requests a human, Lisa calls `transfer_call` immediately. The transfer is acknowledged with a single natural sentence before routing — no hold music narration, no explanation.

Tech Stack

Component	Tool / Platform
Voice AI Agent	Retell
Automation / Orchestration	n8n
Customer Recognition	n8n Webhook + Google Sheets Lookup
Post-Call Logging	n8n Post-Call Webhook + Google Sheets Write
Inbound Call Handling	Retell Inbound Call Handling

Appointment Booking	check_availability_cal + book_appointment_cal functions
Emergency Escalation	transfer_call function → Live Technician
HVAC Troubleshooting KB	hvac_guide Knowledge Base
Company Info KB	RMI Services & Hours Knowledge Base
Agent Language	English

	A	B	C	D	E	F	
1	name	email	number	address	summary	recording	transcript
2							Agent: RMI HVAC, Lisa speaking. What can I do for you? User: Hi. Uh, I'm calling because my AC not working from Agent: Yeah, that's rough — especially with the heat. And User: It's blowing warm here. Agent: Mm-hmm. So, like, it could be something simple — User: Book a technician. Agent: Let me Agent: check what we've got open for this week. I've got M User: Eleven. Agent: Alright, so Monday at eleven thirty works. What's your User: Stefan. Agent: Cool, thanks Stefan. And what's your service address? User: It's let me see. It's California Street thirty two. Agent: Alright, got it. And could you give me your email? User: Stephana at gmail dot com. Agent: So that's s-t-e-p-h-a-n-a at gmail dot com — right? User: Yes. Agent: Alright, let me get that locked in for you. You're all set. User: No. Thanks. Agent: Glad I could help — take care, Stefan! The user called to report that their AC was blowing warm air and requested to book a technician. The agent scheduled an appointment for Monday at 11:30 AM, collected the user's name, address, and email, and confirmed the booking. The user expressed gratitude and the call ended positively. https://dxc03zquidh9.cdp
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Results

✓	Every inbound service call handled consistently — same process, same quality, 24 hours a day, 7 days a week.
✓	Returning customers recognized by phone number before Lisa speaks — name, address, and issue history pre-loaded into the session.
✓	True emergencies (gas smell, burning, sparking) escalated to a live technician in under 5 seconds — no menus, no holds.
✓	Troubleshooting delivered one step at a time, with customer permission, resolving simple issues like thermostat settings and tripped breakers without a truck roll.
✓	Appointment booking fully automated — availability checked and confirmed in real time without involving office staff.
✓	Post-call data logging automated — every completed call written to Google Sheets with zero manual entry.
✓	Zero missed after-hours calls — Lisa handles the full intake and booking flow whether the call comes at 2 PM or 2 AM.
✓	Office team freed from routine call handling — available exclusively for customer escalations and technician coordination.