

Introducing

# AutoChat

## Business Messaging Automation Desktop App

**Project: AutoChat**

**Developer: Muhammad Hamza Shoaib**

**Company Direction: Indus Automation Labs**

**Current Stage: Working desktop pilot build**

**First Pilot Context: AI Wahab International /  
Bedoww Home Interior, Saddar, Karachi**

**Purpose of this update**

This prospectus summarizes the current AutoChat desktop application build, the features already implemented, the business problem it addresses, the first pilot deployment plan, and the future roadmap toward a customizable automation platform for small and medium businesses.

**Current Positioning**

AutoChat is not presented as a final finished product. It is a working phase build under active development, prepared for real-store parallel testing while new modules continue to be added.

## 1. Executive Summary

AutoChat is a Windows desktop application for business messaging automation. It is designed to help small and medium businesses manage WhatsApp customer conversations, answer product questions, use business-specific knowledge, support voice-note transcription, and safely coordinate supplier-dependent requests through a controlled operator dashboard.

The current build has evolved from a personal OpenChat-style assistant into a business-ready support system with a customizable product catalog, approval mode, customer-specific memory, training inbox, supplier desk, voice transcription, trial/licensing foundation, and a first pilot use case for AI Wahab International / Bedoww Home Interior in Saddar, Karachi.

The purpose is to create a practical AI automation product for local businesses that do not have advanced CRM or chatbot infrastructure, while keeping humans in control during early deployment.

**Why this matters**

Many local retailers receive repetitive product, price, stock, delivery, and availability questions through WhatsApp. AutoChat aims to reduce manual response load while preserving polite, business-safe, culturally natural communication in English, Urdu, and Roman Urdu.

## 2. Problem Statement

Small retailers often depend on WhatsApp as their main customer channel. However, manual replies are slow, inconsistent, and difficult to scale when customers ask about product availability, variations, prices,

delivery timing, and order follow-ups. Generic chatbots often fail because they do not understand each business catalog, cannot learn from the owner, and may respond too casually or inaccurately.

- High volume of repetitive WhatsApp questions consumes staff time.
- Customers expect fast replies in local language and informal Roman Urdu.
- Product availability and supplier-dependent details often require manual checking.
- Most small businesses cannot maintain complex CRM systems or train developers.
- Unsafe automation can damage customer trust if it invents stock, prices, or delivery promises.

### 3. Proposed Solution

AutoChat provides a desktop control center where the business owner can connect WhatsApp, add products, manage replies, approve AI drafts, train the system from unknown questions, store customer-specific notes, and coordinate supplier follow-ups. The product is designed to be general for many businesses, while the current pilot is configured for Bedoww / Al Wahab International.

Solution Layer	Current Capability
WhatsApp desktop automation	QR-based session, incoming/outgoing message handling, old-message filtering, supplier auto-reply prevention.
Business personalization	Editable business profile, website, shop timing, products, stock status, support tone, and language policy.
AI control	Auto mode, manual mode, and approval mode for safe human supervision.
Product intelligence	Client-added product catalog with smart keyword matching and stock/price safety rules.
Learning loop	Training inbox to save answers as FAQ, policy, product knowledge, general business knowledge, or customer memory.
Operations support	Supplier desk for hidden fulfillment cases and customer-safe updates.
Voice support	Customer voice-note transcription using ElevenLabs STT, with voice replies treated as optional premium capability.
Commercial readiness	Trial mode, device-bound license activation, and packaging path for Windows installer.

### 4. Current Build Status

AutoChat has reached a working desktop pilot stage. The current application can be launched locally, connect to WhatsApp, receive messages, generate replies, manage products, create pending AI drafts, save customer memory, train knowledge, handle supplier cases, transcribe voice notes, and support trial/licensed operation.

Module	Status	Notes
Electron desktop app	Working	Main UI pages and local app shell are functioning.
WhatsApp connection	Working	QR/session-based WhatsApp link through desktop app.
Business settings	Working	Client can edit business profile without developer backend changes.
Product catalog	Working	Client can add/search/delete products from UI.
Product matching	Working	Improved matching handles Salonika, percale, king size, bedsheet terms.
Manual/Approval/Auto modes	Working	Owner can choose safe operating mode.
Customer memory	Working	Per-customer notes are isolated and injected only for that

		<b>customer.</b>
<b>Training inbox</b>	<b>Working</b>	<b>Unknown questions can be converted into reusable business knowledge.</b>
<b>Supplier desk</b>	<b>Working</b>	<b>Supplier queries and customer-safe replies supported.</b>
<b>Voice-note transcription</b>	<b>Working</b>	<b>Voice notes can be transcribed and fed into the same AI pipeline.</b>
<b>Voice replies</b>	<b>Optional</b>	<b>ElevenLabs free tier limits API library voices; treated as optional premium feature.</b>
<b>License system</b>	<b>Working</b>	<b>Trial, development, and licensed modes tested.</b>
<b>Windows packaging</b>	<b>In progress</b>	<b>Prepared for .exe installer pilot deployment.</b>

## 5. Key Features Already Supported

### 5.1 WhatsApp Business Messaging Core

- **WhatsApp QR connection inside desktop app.**
- **Incoming and outgoing message tracking.**
- **Ignores old messages that existed before app launch.**
- **Ignores own messages, broadcasts, empty messages, and unsupported media in the text pipeline.**
- **Supplier contacts are detected and excluded from customer-service auto-replies.**
- **Number normalization for Pakistani phone formats such as 0312..., +92312..., and 92312....**

### 5.2 Business-Safe AI Reply System

- **Professional customer-service tone using respectful language such as aap, ji, please, zaroor, and shukriya.**
- **Avoids casual personal-bot language such as tu, tera, abe, and yaar.**
- **Uses business context such as shop timing, website, location, shipping policy, and product categories.**
- **Does not invent live stock, prices, delivery timelines, or supplier details when not verified.**
- **Supports English, Urdu/Roman Urdu, and mixed customer language patterns.**

### 5.3 Product Manager and Smart Product Search

- **Client can add product name, category, price, stock status, description, product URL, and tags directly from UI.**
- **Search handles customer phrasing, Roman Urdu, plural/singular differences, and product synonyms.**
- **Verified catalog data is injected into AI replies for relevant product questions.**
- **Stock status determines reply behavior: available, unavailable, or confirm before final order.**
- **Tested with Bedoww Premium Salonika King Sized Pure Cotton Bedsheet Percale Finished - Loose Packing.**

### 5.4 Human Control Modes

<b>Mode</b>	<b>Behavior</b>	<b>Recommended Use</b>
<b>Manual Mode</b>	<b>Incoming messages are saved, but AutoChat does not generate or send replies.</b>	<b>Setup, testing, or sensitive conversations.</b>
<b>Approval Mode</b>	<b>AutoChat generates editable AI drafts but waits for owner approval before sending.</b>	<b>Recommended for first store pilot.</b>
<b>Auto Mode</b>	<b>AutoChat sends replies automatically after generating them.</b>	<b>Later use after enough trust and training.</b>

## 5.5 Customer Memory Panel

The application supports customer-specific memory such as preferences, past orders, areas, warnings, and custom notes. These memories are scoped by customer contact ID, which prevents memory from one customer being used for another. This is essential for personalization without cross-customer leakage.

## 5.6 Training Inbox

The training inbox is a live learning mechanism. When AutoChat cannot find matching product, FAQ, policy, or business knowledge, it creates a training item. The owner can answer once and save the answer as FAQ, policy, product knowledge, general knowledge, one-time reply, or customer memory.

## 5.7 Supplier Desk

The supplier desk supports internal supplier-dependent workflows. The owner can create supplier cases, send supplier queries, save supplier replies, and generate a customer-safe update. Supplier names, internal cost, margin, and procurement details are intentionally hidden from customers.

## 5.8 Voice Note Transcription

The current build supports customer voice-note transcription through ElevenLabs speech-to-text. Voice transcripts are saved into the chat and passed into the same AI pipeline as text messages. This is important for Pakistani retail contexts where customers commonly send voice notes instead of typed messages.

## 5.9 Trial and License System

AutoChat includes development, trial, and licensed modes. Trial usage can be limited by customer count and reply count, while licensed mode unlocks full use for a device. A device ID and license activation screen are included for early commercial testing.

# 6. Visual Walkthrough of Current App

The following visual walkthrough summarizes the main screens represented in the current desktop build. The live screenshots submitted with this update demonstrate the same modules: dashboard, business settings, products, chats, supplier desk, voice/license controls, and related operator workflows.

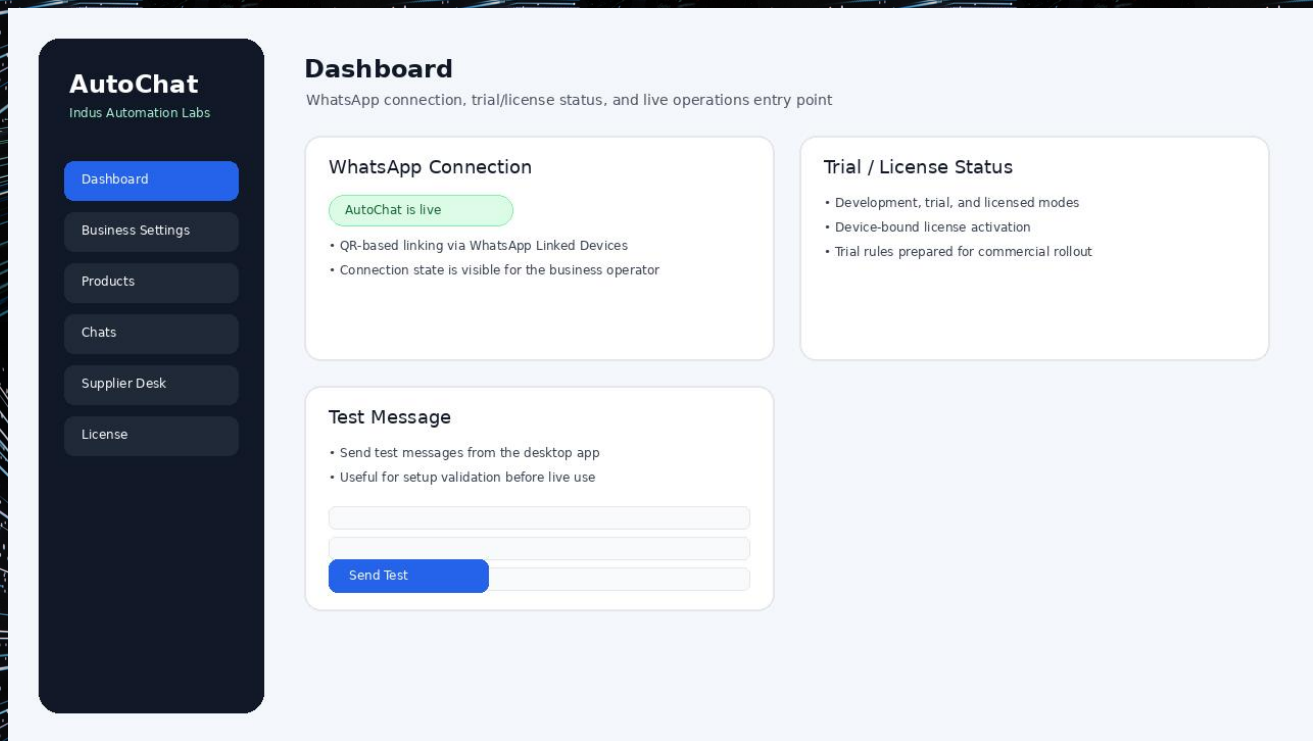
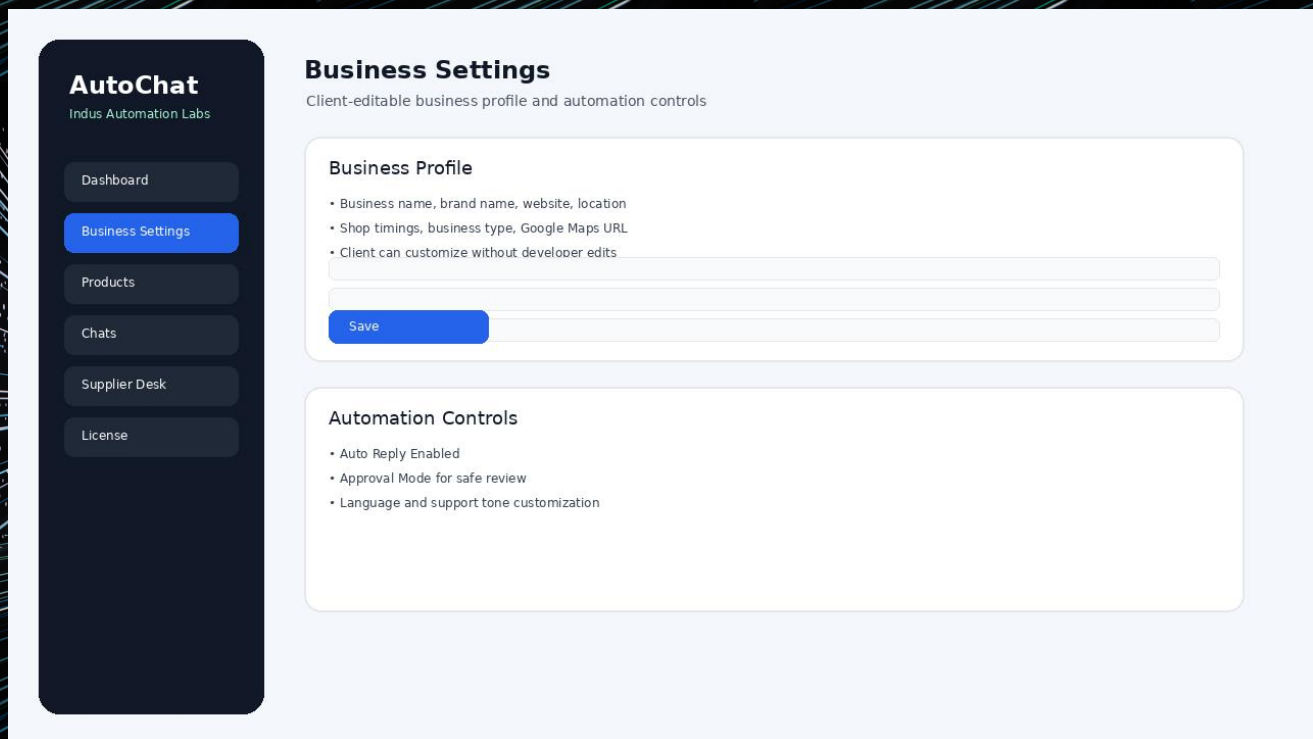
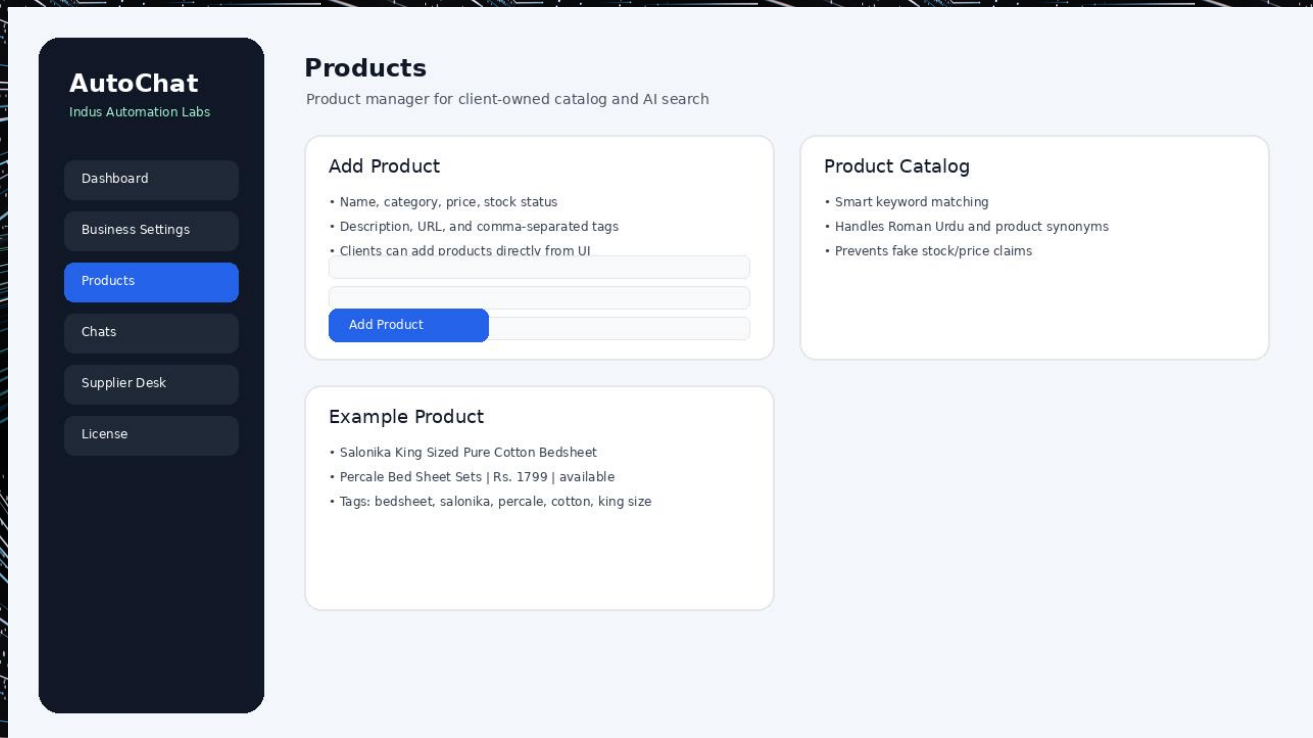


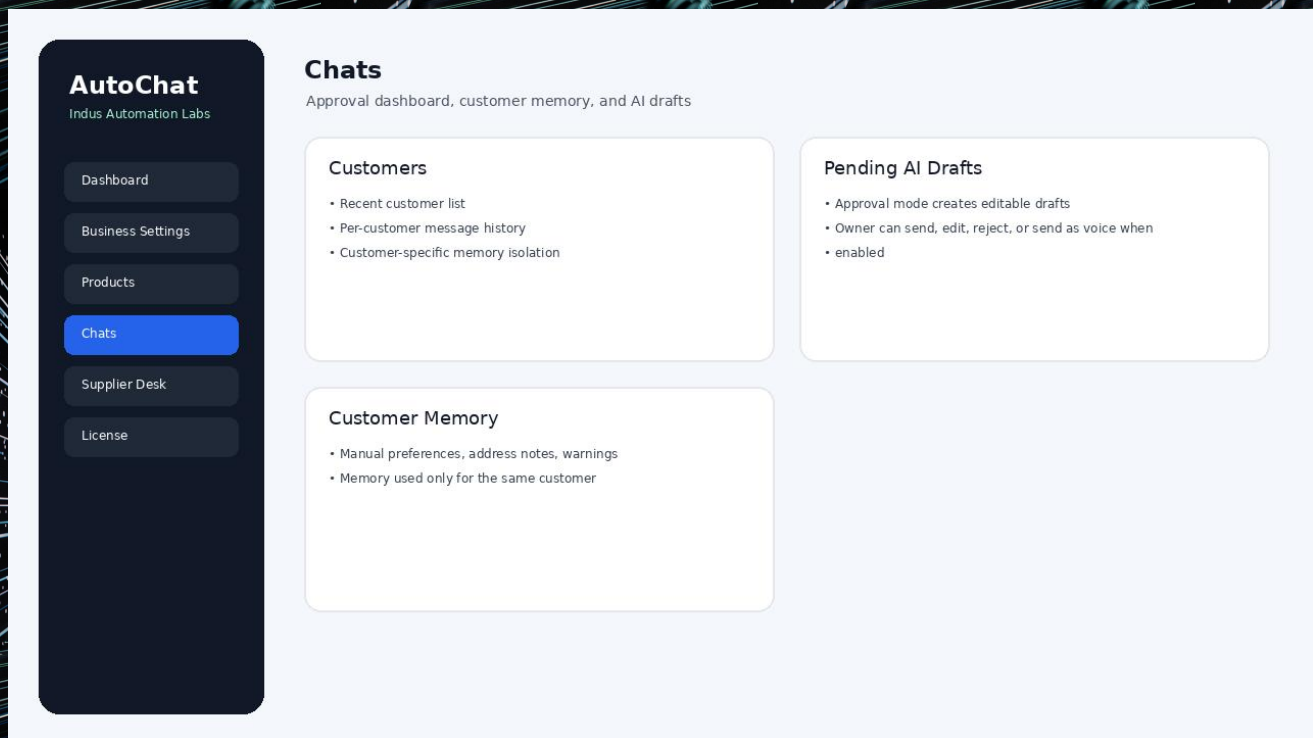
Figure 1. Dashboard: WhatsApp connection, app status, trial/license state, and test message panel.



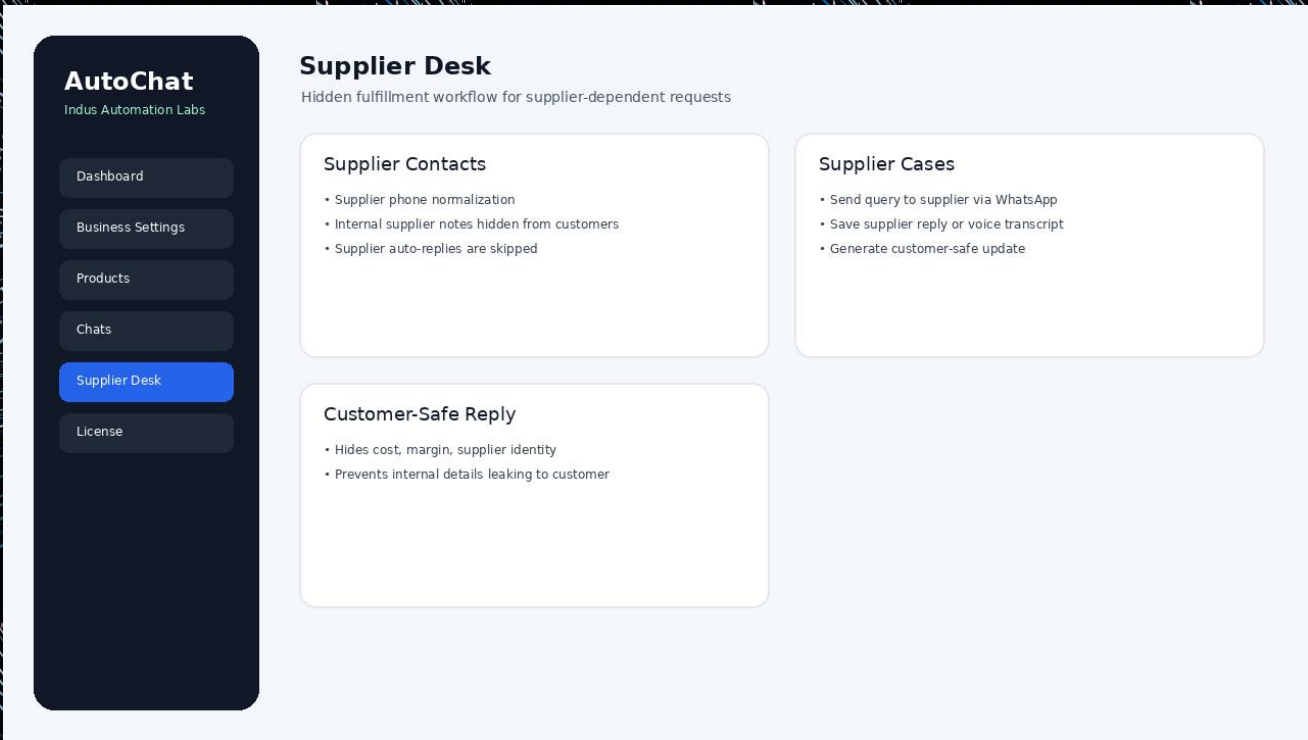
**Figure 2. Business Settings: client-customizable profile, policies, language, and automation controls.**



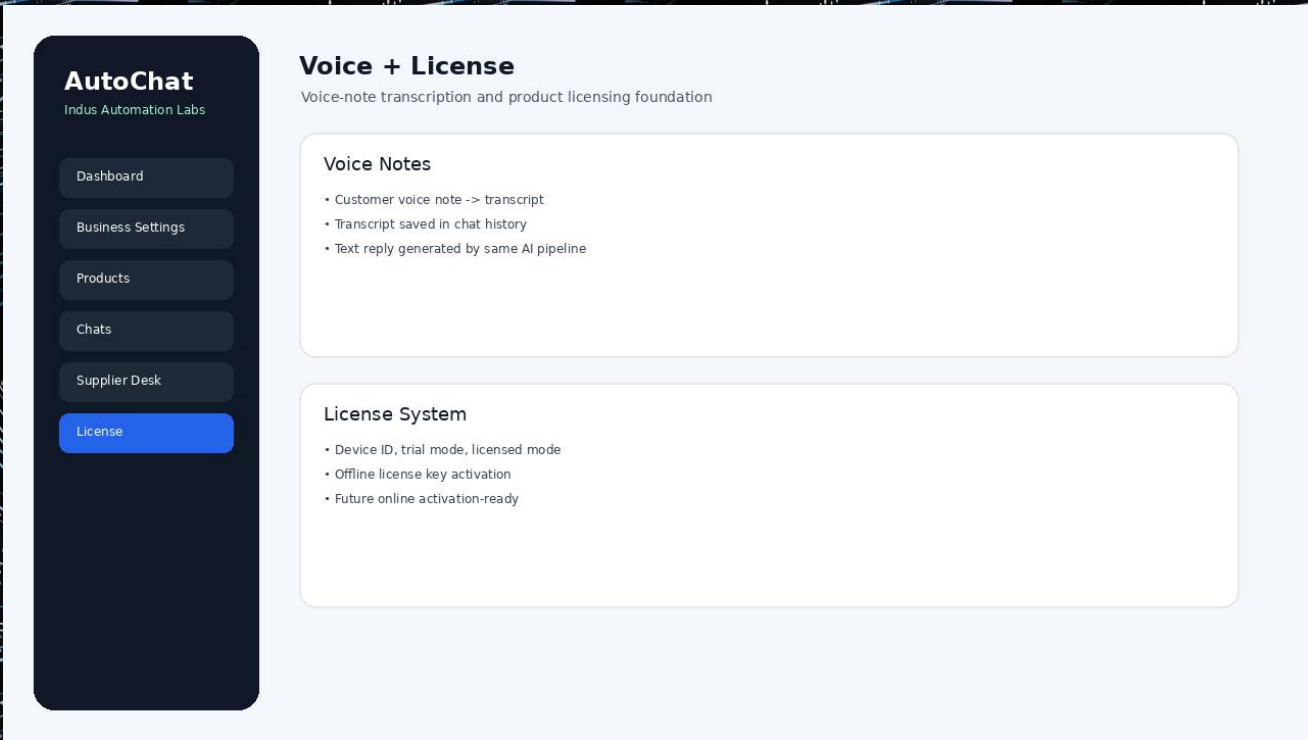
**Figure 3. Product Manager: product entry, catalog management, smart search, and stock-safe data.**



**Figure 4. Chat Dashboard: customers, messages, approval drafts, manual replies, and customer memory.**



**Figure 5. Supplier Desk: internal supplier cases, supplier query, reply capture, and customer-safe output.**



**Figure 6. Voice and License Foundation: voice transcription, optional voice replies, and licensing path.**

## 7. Technical Architecture

AutoChat is implemented as an Electron desktop application. The main process manages WhatsApp, file storage, product/catalog logic, supplier cases, licensing, and AI calls. The renderer process provides the business dashboard UI. A preload bridge exposes controlled IPC methods to the UI.

Layer	Technology / Role
Desktop Shell	Electron app with main process, renderer UI, and preload bridge.
WhatsApp Adapter	whatsapp-web.js with LocalAuth session handling and QR-based linking.
AI Reply Engine	OpenRouter-compatible LLM pipeline with business prompt, product context, knowledge, and customer memory.
Speech-to-Text	ElevenLabs STT for WhatsApp voice-note transcription.
Local Storage	JSON files during MVP for products, settings, messages, memories, training events, suppliers, and licensing.
Licensing	Device ID, trial guard, and offline license activation foundation.
Packaging	Prepared for Windows .exe installer through electron-builder.

## 8. First Pilot Deployment: Al Wahab International / Bedoww

The first real-world pilot is planned for Al Wahab International / Bedoww Home Interior in Saddar, Karachi. This business context is valuable because it includes product-heavy customer support, frequent WhatsApp communication, supplier-dependent availability, and local language usage.

- **Business category:** home interior, bedding, bedsheets, blankets, bed covers, sofa covers, curtains, cushions, carpets, and mats.
- **Website context:** Bedoww Home Interior, modern/chic home interior products, free shipping above Rs. 3000.
- **Pilot focus:** product queries, availability, pricing, customer-specific preferences, and supplier follow-ups.
- **Recommended pilot mode:** Approval Mode ON, Auto Reply Enabled ON, Voice Transcription ON, Voice Replies OFF, license activated.
- **Pilot goal:** run in parallel with real store operations, compare response quality, and safely improve the knowledge base over time.

## 9. Product Advantages

Advantage	Explanation
Local-business first	Designed for real small business workflows rather than generic chatbot demos.
Client-customizable	Business owner can add products, settings, knowledge, and memory through UI.
Human-in-the-loop	Approval mode reduces risk during early adoption.
Catalog-aware	AI uses verified products instead of hallucinating details.
Customer memory	Supports personalization while isolating each customer.
Trainable	Unknown questions become reusable knowledge through the training inbox.
Supplier-aware	Supports hidden fulfillment workflows without exposing internal details.
Voice-aware	Understands customer voice notes, which are common in local markets.

## 10. Responsible Automation and Safety Design

**AutoChat is intentionally designed with safeguards because customer-service automation can damage trust if it responds incorrectly. The current build includes multiple guardrails at the product, prompt, and workflow levels.**

- **No automatic claims about unavailable stock, exact price, or delivery unless confirmed in catalog or knowledge.**
- **Approval mode for owner review before replies are sent.**
- **Supplier auto-reply skip to avoid sending customer greetings to supplier contacts.**
- **Customer memory isolation to prevent cross-customer personalization leaks.**
- **Training inbox for owner-approved knowledge updates instead of uncontrolled self-learning.**
- **Voice replies treated as optional because free API library voices are restricted and voice automation must be handled carefully.**
- **Pilot deployment recommended in supervised mode before full automation.**

## 11. Roadmap

Phase	Planned Work
Short term	Product import via CSV/JSON, export catalog, template download, improved packaging, API key settings UI, better onboarding.
Pilot hardening	SQLite migration, encrypted API-key storage, userData storage migration, stronger installer build, error reporting, logs dashboard.
Automation growth	Per-customer bot control, advanced approval rules, product images, stock workflows, supplier reply auto-linking.
Voice expansion	Voice reply support as premium/API-accessible feature, branded voice options, local fallback STT.
Commercial rollout	Online license server, subscription plans, automatic updates, client onboarding package.
Platform expansion	Telegram, Messenger, Instagram DM, website chat adapters through a unified agent core.
Future suite	Integration with AutoVision/CCTV VLM alerts and broader Indus Automation Labs automation tools.

## 12. AdventureX Relevance

**AutoChat represents a practical AI automation project with a clear local market, a working implementation, and a roadmap toward a broader business automation platform. It is not limited to a single store; the architecture is being built so any client can customize products, settings, suppliers, knowledge, and workflows from the desktop UI.**

**The project aligns with AdventureX because it combines applied AI, user-centric product development, small-business automation, commercial experimentation, and founder-driven iteration. The current phase shows tangible progress: not only concept documentation, but a working desktop application tested across WhatsApp messaging, product search, training, supplier workflows, voice-note transcription, and license activation.**

## **Current update summary**

**AutoChat has moved from a personal chat automation script to a working business desktop application. It is now ready for controlled pilot testing at the first store while continuing development toward a deployable product under Indus Automation Labs.**

