**Module: Inbox Auto-Reply System (Unified for Facebook, Instagram, WhatsApp)**

## 🧩 Purpose

To intelligently respond to customer inquiries in FB Page inbox, Instagram DMs, and WhatsApp using brand-specific tone and context-aware AI. The system aims to:

* Reduce manual load on customer support.
* Speed up query handling with GPT-generated replies.
* Understand product names, concerns, order-related queries.
* Support multilingual and tone-personalized replies.
* Enable fallback to human (Bot-to-Human Handoff).

## 🎯 Key Features

### 🔹 Unified Inbox Connector

* Centralized webhook listener for Meta Messenger, Instagram DMs, and WhatsApp Cloud API.
* Detects which platform and Page/Brand message originated from.

### 🔹 GPT-Powered Smart Reply Engine

* Triggers reply suggestion using:
  + Customer message
  + Brand tone/preset
  + Product catalog embeddings
  + Order sheet (if connected)

**Example Prompt:** > “Customer says: ‘Do you have anything for acne?’ | Reply as Lavishta in expert, helpful tone. Include 1-2 matching products, usage tips, and ask a follow-up.”

### 🔹 Auto Mode + Assist Mode

* **Auto:** Replies sent instantly unless low confidence or fallback.
* **Assist:** Suggest replies in panel for human agent approval.
* Confidence threshold adjustable per brand.

### 🔹 Language & Tone Settings

* Language Detection (Bengali, English, mixed)
* Tone per brand: expert, friendly, premium, casual
* Multilingual GPT fine-tuning per tone/language combo

### 🔹 Order-Specific Logic

* If order number or tracking request detected → trigger Woo/Shopify order lookup
* If product name detected → trigger vector match and include product info

### 🔹 Bot-to-Human Escalation

* If GPT returns low confidence OR customer replies “talk to human”
* Assigns to human team (visible in panel)
* Marks conversation with ⚠️ flag

### 🔹 Analytics & Logs

* Average response time
* AI vs Human reply ratio
* Top product queries
* Top concern topics (for blog engine/SEO)

## 🔧 How to Build

### 💬 Messaging Listener

* Meta Webhooks for: messages, message\_reactions, story\_reply, message\_reads
* WhatsApp Cloud API listener for /v1/messages
* Store each incoming message in inbox\_messages DB with:
  + { customer\_id, channel, message\_text, intent, vector, response\_type, assigned\_to, created\_at }

### 🧠 AI Reply Generator

* Use GPT prompt template per brand tone
* Include previous messages as context window
* Include top 3 vector-matched products
* Match for FAQs (“Do you deliver in Sylhet?”, “Is this original?”)
* Return: response\_text, confidence, matched\_product\_ids, response\_mode

### 🧑‍💼 Agent Panel

* Inbox view with auto/assist/manual toggle
* Approve/Reject/Edit suggested reply
* Assign to human, mark as resolved
* Emoji badge for AI-assisted reply

### 🛠️ Superadmin Settings

* Enable/disable channel (Messenger, IG, WhatsApp) per brand
* Set reply limits per day/week (for free vs paid tiers)
* View per-brand GPT token usage
* Adjust fallback threshold per brand
* See all flagged conversations across brands

## 📎 Integration Points

* 🧠 Product Brain: For vector match of product name in inbox
* 🔗 Blog Engine: Suggest blog link in response if matched topic
* 🛍️ Order DB: Lookup past orders if message includes phone/invoice ID
* 🎮 Gamification: Inbox campaign prompts (e.g., comment to win)
* 📬 Email/SMS Module: Trigger follow-up if inbox → order confirmed

## 🧪 Example Flow

1. Customer sends: “What’s good for oily skin and under 1000?”
2. System:
   * Detects intent: product recommendation
   * Uses embeddings: finds 2 matching products under budget
   * GPT prompt crafted with tone “Expert”
3. Auto reply sent: “Here are two great picks for oily skin under ৳1000…”
4. Logged and marked as resolved

## 🧩 Future Add-Ons

* Voice-based inbox (with Whisper transcription)
* CTA buttons in replies (Open website, View product)
* Smart appointment scheduling via Messenger/WA
* Smart CRM tagging via inbox behavior