AI Chatbot Sales Platform - System Implementation Documentation

1. Overview

This document specifies the implementation details for an AI-powered chatbot platform that integrates with multiple sales channels (Instagram, WhatsApp, MercadoLibre, etc.). The system follows an event-driven architecture where messages are processed in real-time via webhooks and REST API calls.

2. System Architecture

2.1. Components

- **Message Ingestion Layer**: Webhooks for receiving messages from sales channels.
- **Message Processing Engine**: AI chatbot with business context and automated reply logic.
- **Human Intervention Layer**: Assigns flagged conversations to a human manager when AI confidence is low.
- **Dashboard Interface**: Web-based UI for monitoring and handling flagged conversations.
- **Outbound Messaging Service**: REST API for sending chatbot replies back to the sales channels.

2.2. Event-Driven Workflow

Step 1: Message Reception

- A new message is received via webhook from a sales channel.
- The system checks if a thread already exists for the user:

- **If a thread exists**: The message is appended to the existing conversation.
- **If no thread exists**: A new thread is created.

Step 2: AI Processing

- The AI analyzes the message and searches for relevant information in the provided PDF (business context and common questions).
- **If a matching response is found**: The chatbot formulates and sends a reply via the outbound messaging API.
- **If no matching response is found**:
  - The system flags the conversation as "Human Feedback Needed."
  - The conversation is moved to the "Mine" section in the dashboard.
  - A notification is sent to the sales manager.

Step 3: Human Intervention (if required)

- The sales manager reviews flagged messages in the dashboard.
- Once a response is provided, the message is sent via the outbound messaging API.
- The conversation is then moved back to the general chat history.

Step 4: Outbound Messaging

- The AI or sales manager response is sent back to the customer through the respective sales channel's REST API.
- The message is logged in the conversation thread for future reference.

3. Technical Implementation

3.1. Webhook Integration

- Webhooks from each sales channel will be registered to receive messages.
- Each incoming message triggers an event that is processed asynchronously.

3.2. AI Chatbot Logic

- The AI retrieves information from the provided business PDF.
- It matches user queries with stored knowledge.
- If a response is available, it sends an automated reply.
- If no match is found, it flags the conversation for human review.

3.3. Dashboard Functionality

- **View Conversations**: Displays active and past conversations.
- **Filter Sections**:
  - "All" (All conversations)
  - "Bot" (AI-handled conversations)
  - "Mine" (Conversations needing human intervention)
- **Respond to Messages**: Sales managers can manually reply to flagged messages.

3.4. Notifications

- The system will send notifications when a conversation is flagged for human intervention.
- Notifications will be delivered through the dashboard UI and email (optional future enhancement).

4. Future Enhancements

- Assign multiple managers dynamically based on workload.
- Implement adaptive AI logic per sales channel.
- Introduce conversation timeout and auto-reset mechanisms.

This document serves as the foundation for coding the platform, ensuring clarity on the event-driven workflow and system behavior.