

Product Requirements Document: AI Voice Agent for Vendor Customer Service

1. Project Goal

The primary goal of this project is to **enhance the efficiency and scalability of our customer service operations** for paid vendors by deploying an AI-powered voice agent. This agent will handle routine incoming calls, provide immediate assistance, and accurately route complex queries to the appropriate human customer service representatives. By automating initial interactions, we aim to **reduce wait times for vendors**, free up human agents for more complex issues, and ultimately **improve overall vendor satisfaction and retention**.

2. Core Functionality & Output

The AI voice agent will be capable of understanding and responding to natural language queries from paid vendors, with the added capability to **adapt its responses based on the caller's sentiment**. Its core functionalities and expected outputs include:

2.1. Call Reception and Identification:

- **Input:** Incoming call from a vendor.
- **Process:**
 - **Automatic Speech Recognition (ASR)** converts vendor's speech to text.
 - The system attempts to **identify the vendor** based on their registered phone number.
 - Integration with **CRM/vendor database** retrieves vendor details.
- **Output:**
 - Verification of vendor identity.
 - Personalized greeting based on the identified vendor.
 - Logging of call initiation in the system.

2.2. Query Understanding and Intent Recognition:

- **Input:** Vendor's spoken query (e.g., "I want to update my listing details," "My ad isn't showing up," "I want to stop ecs", "I am not receiving leads", "I am receiving less leads").
- **Process:**
 - **Natural Language Understanding (NLU)** parses the vendor's query and identifies the underlying intent.
 - Leverage a pre-trained model and continuously updated **knowledge base** of common vendor queries.

- **Output:**
 - **Categorization of the query intent** (e.g., Listing Management, Ad Performance, Billing, Technical Support, General Inquiry).
 - Extraction of **key entities** (e.g., specific listing ID, date, amount).

2.3. Automated Information Retrieval & Provision:

- **Input:** Identified intent and extracted entities.
- **Process:**
 - **Sentiment Analysis** analyzes the caller's tone, pitch, and word choice in real-time to detect emotions such as frustration, anger, confusion, happiness, or neutrality.
 - **Dynamic Voice Modulation:** The AI's response is adjusted based on detected sentiment. For example:
 - If **frustration or anger** is detected, the AI's voice might become slower, calmer, and more empathetic.
 - If **confusion** is detected, the AI might speak more clearly, rephrase explanations, or offer to repeat information.
 - If **neutral or positive**, the AI can maintain a helpful and professional tone.
 - The system accesses relevant internal databases (e.g., listing management system, ad platform, billing system, FAQ knowledge base).
 - A clear and concise verbal response is synthesized, incorporating the appropriate voice modulation.
 - Information provided may include: Listing status updates, basic ad performance metrics (e.g., current impressions, clicks), account balance or last payment details, and answers to frequently asked questions regarding platform usage, policies, or troubleshooting.
- **Output:**
 - **Verbal response** providing the requested information, delivered with contextually appropriate **voice modulation**.

2.4. Guided Self-Service:

- **Input:** Vendor expresses a common task (e.g., "How do I add new photos?").
- **Process:**
 - Provide step-by-step instructions verbally.
 - Occasionally, send a link to a relevant help article or video tutorial via SMS/email.
- **Output:**
 - Verbal guidance for common self-service tasks.
 - Digital resource delivery.

2.5. Intelligent Call Routing & Escalation:

- **Input:** Vendor query that cannot be resolved by the AI or explicit request to speak to a human.
- **Process:**
 - Identify the most appropriate department/agent based on the detected intent and vendor history.
 - Seamlessly transfer the call to a human agent, providing a **summary of the AI's interaction** and the vendor's query.
- **Output:**
 - Successful transfer to a human agent with context.
 - Logging of the escalation reason and transfer details.

3. Success Metrics

The success of the AI voice agent will be measured by the following key performance indicators:

- **First Call Resolution (FCR) Rate (for AI-handled calls):** Percentage of vendor queries resolved in the first interaction with the AI.
 - **Target:** 70% for common queries.
- **Call Deflection Rate:** Percentage of vendors who choose to self-serve via the AI rather than waiting for a human agent.
 - **Target:** Increase in self-service adoption by 15% within 6 months.
- **Voice Agent Uptime:** Percentage of time the AI voice agent is fully operational.
 - **Target:** 99.9%
- **Sentiment Detection Accuracy:** Percentage of correctly identified caller emotions.
 - **Target:** >80% for core emotions (e.g., frustration, confusion).

5. Example Workflow

Scenario: A paid vendor calls customer service regarding their listing.

1. **Vendor Dials:** A paid vendor, "XYZ Electronics," dials the customer service number.
2. **AI Reception:** The AI voice agent answers the call: "Thank you for calling Justdial's Customer support. To help me assist you, please state your registered phone number or vendor ID."
3. **Vendor Identification:**
 - Vendor: "My number is 9876543210."
 - AI: (Validates number against CRM) "Thank you, Mr. Sharma from XYZ Electronics. How can I help you today?"

4. Query Understanding & Initial Sentiment Detection:

- Vendor (sounding slightly frustrated): "My listing for 'XYZ Electronics - Jayanagar' isn't showing the new photos I uploaded yesterday."
- AI: (NLU processes the query, identifies intent: "Listing Update/Display Issue" and entities: "XYZ Electronics - Jayanagar," "photos," "yesterday." SER detects slight frustration.) "I understand you're having an issue with your photos not appearing on your 'XYZ Electronics - Jayanagar' listing. Let me check that for you." (AI's voice is calm and reassuring).

5. Information Retrieval & Resolution (Automated with modulated response):

- AI: (Accesses listing management system) "I see your photos were uploaded and are currently pending review. Our system typically processes photo updates within 24-48 hours. They should be live shortly. Would you like me to send you a link to our photo guidelines?" (Voice maintains a helpful, slightly empathetic tone due to earlier detected frustration).
- Vendor: "No, that's fine. So they will be up soon?"
- AI: "Yes, they are in the queue for approval and should be visible within the next 24 hours. Is there anything else I can help you with regarding your listing?"

6. Alternative Query / Escalation:

- Vendor (tone changes, sounds more concerned): "Actually, yes. I also have a question about my last bill, it seems higher than usual."
- AI: (NLU identifies new intent: "Billing Inquiry." SER detects concern.) "I can help with general billing inquiries. Could you tell me what specific part of your bill you're concerned about?" (Voice shifts to a more direct, yet still empathetic tone).
- Vendor: "I can provide you with your last three invoice amounts and due dates. For a detailed breakdown and to discuss specific charges, I will need to transfer you to our billing specialist. Would you like me to connect you now?"
- Vendor: "Yes, please."

7. Intelligent Call Routing:

- AI: "Certainly. Please hold while I connect you to a billing specialist. I have already provided them with the details of your call regarding your listing photos and your billing inquiry, and noted your concern about the bill. One moment please."
- (AI seamlessly transfers the call to the billing department, providing the human agent with the transcript of the conversation and the identified intents, including a note on detected sentiment.)

8. Human Agent Takes Over:

- Human Agent: "Hello Mr. Sharma, this is [Agent Name] from the billing

department. I understand you have a question about your latest bill and your listing photos are pending review. I also see you sounded a bit concerned about the bill. How can I assist you with the billing today?"

9. **Post-Call (after human interaction ends):**

- AI (or system): (Sends an optional SMS to vendor) "Thank you for contacting Justdial. Please rate your experience today from 1-5."